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## ORIGINAL ARTICLES.

### SOME POINTS OF SPECIAL INTEREST IN THE TREATMENT OF COMPOUND FRACTURES,

#### INCLUDING A REPORT OF FIVE HUNDRED AND SIXTEEN CASES.[1]

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AT a meeting of the American Medical Association which convened in Washington, in June, 1884, I presented a paper on the treatment of compound fractures, in which were reported one hundred and forty-four cases treated consecutively, without a death from blood-poisoning. In the present contribution I shall present five hundred and sixteen cases of compound fractures, all of which, excluding those which were at that time reported, have occurred within the past two years in my hospital practice at St. Vincent, Ninety-ninth Street, and Bellevue hospitals. As many of these cases are of special interest from several points of view, I have undertaken the task of reporting them for the purpose of eliciting a discussion from members of this Association upon some important questions which naturally arise in connection with the general treatment of compound fractures. There are some recommendations discussed in my last paper which a larger experience has taught me the wisdom of modifying to accord with more recent views in surgical pathology.

The procrustean rules of absolute cleanliness, of immediate fixation, and of provision for free drainage in every compound fracture, need no modification. The technique involved in carrying out the details of these rules may vary, but the general principles remain the same. A more extended experience in the treatment of compound fractures has taught me that, while absolute cleanliness is essential, and immediate fixation is necessary, that no splint should be left on a limb longer than eight days without either its entire removal, or at least an examination of the seat of fracture. Formerly I inclined rather to the view that a splint had better remain undisturbed throughout the entire period of repair; but within the past year I have seen several bad results arising from a too rigid adherence to this rule. In one case, I saw a compound fracture which was skilfully dressed with plaster of Paris examined at the expiration of six weeks, during which time the patient's condition was in every way satisfactory. Upon removal of the splint, the bone was protruding, the displacement was great, and considerable union had taken place. A complete osteotomy corrected the deformity, and six additional weeks were occupied in obtaining a result which was perfectly satisfactory. If this fracture had been examined at the end of eight days, the protrusion of the bone would have been detected at once, and the faulty position rectified. While this result is exceptional, such unfortunate complications can always be obviated by a simple inspection of the fracture after eight days, and then again in ten days, after which time no serious deviation can occur. The time involved in the careful examination of every compound fracture is not to be considered in comparison with the risk which an omission to do so may involve.

Every compound fracture needs careful study and attention. I am more and more convinced of the importance of the first dressing. The patient who suffers from a severe compound fracture of any bone should be placed upon the operating table and the fracture examined and dressed with the same care with which a resected joint or a laparotomy should be dressed. The parts should be made aseptic at once, the deformity immediately overcome, the bones brought in exact apposition while the patient is under ether and the muscles are relaxed. Loose pieces of bone not adherent to periosteum are removed and the fragments are now adjusted, the antiseptic dressings applied with great care, a plaster-of-Paris bandage neatly placed upon the limb, and the fracture is certain to do well.

The manner in which the first dressing is applied has much to do with the prognosis. Esmarch has said that the fate of a patient often hangs upon the surgeon who first touches the wounded man. Wherever the circumstances are within the control of the surgeon, I would go even still further and recommend that ambulance surgeons should exercise great care in the transfer of a compound fracture to the hospital. I have made it a rule of practice at the Ninety-ninth Street Hospital that antiseptic irrigation should be employed at the station-house or upon the sidewalk before the patient is moved, and that at once after the irrigation a clean antiseptic dressing be applied before the patient is lifted into the ambulance. I feel sure that the success of treatment in the large number of compound fractures which have been admitted to this hospital is in great part due to the strict adherence of this important rule, which I have found willingly and cheerfully obeyed by the ambulance surgeons, who have begun to realize how important is their position in the matter of antiseptics.

There are some new questions which have arisen that are of interest when discussed in the light of the recent revelations in modern surgical pathology. Among these many subjects for special study and observation I have selected a few which seem to me

[1] Read before the New York County Medical Association, in the Carnegie Laboratory, October 18, 1886.

as possessing unusual interest in connection with the report of these compound fractures.

1st. Meningeal hemorrhage.
2d. Fat embolism.
3d. Insanity following fracture of skull.
4th. Malignant disease.
5th. Tenotomy.
6th. Healing by Schede's method.
7th. Amputation.

*Meningeal Hemorrhage.*—This variety of hemorrhage occurring in compound fractures of the skull has been a subject about which there existed much diversity of opinion among surgeons. It has been the routine treatment for many years to ligate the common or the external carotid artery in case of severe hemorrhage from the middle meningeal artery or one of its large branches. I have ligated the carotid in a case of severe meningeal hemorrhage and the bleeding was at once arrested. Among the cases in my list of compound fractures of the skull is one which is of great practical interest as bearing upon a new method of arresting hemorrhage without resorting to a ligation of the carotid.

In the case referred to, a man received a severe compound fracture of the skull upon the right side. The accident was caused by a stone weighing 700 pounds falling upon his skull. I trephined the seat of fracture and removed over forty pieces of bone, loose in the wound, of which two fragments were larger than a twenty-five cent piece.. I found a large epidural blood-clot nearly the size of the palm of my hand between the dura and the internal surface of the skull. I removed the blood-clot, which I have preserved as far as possible in this glass jar, and upon the removal of the blood-clots I found the middle meningeal artery bleeding to an alarming extent. I controlled the hemorrhage as best I could temporarily with sponges and tampon until I was enabled to remove more bone in order to secure the open vessel. Having removed bone to the extent of six inches I attempted with artery forceps to seize the bleeding point. Every attempt failed and I was unable to grasp the artery on account of the dura mater receding when the artery forceps caught hold of the depressed dura mater through the opening in the skull. Whenever the ends of the forceps were applied to the dura mater this membrane was pushed down and the forceps could not be made to catch hold of the bleeding point.

The idea suggested itself to me in this crisis to introduce the point of a tenaculum through the membrane and out again in such a way as to include the bleeding vessel in the cuvre of the tenaculum. With this instrument I now raised up the dura mater from the brain on a level with the skull, and then applied the artery forceps. The dura mater, which before receded from the grasp of the forceps, and formed a tense, concave surface, was now held firmly, and that part of the membrane held between the curve of the tenaculum was lax, and permitted the forceps to seize tissue and artery. The vessel was tied with catgut, and the hemorrhage was arrested. The paralysis upon the left side of the body disappeared. The wound healed in an aseptic manner, and the patient recovered so far as the operation was concerned. He died some four or five weeks after the injury, and I was enabled to secure an autopsy, which was made by Dr. Grauer. There was nothing in the brain, or in its coverings, which could have caused death; the patient had died from exhaustion and inanition, with no local brain lesion. The use of the tenaculum in the manner described, to seize a torn middle meningeal artery through an opening made in the skull, seems to me a better operation than ligation of the external or common carotid artery in the continuity.

Besides the question of the arrest of hemorrhage by ligation of the meningeal artery by means of a tenaculum introduced through an opening in the skull, another question has arisen in connection with these cases of meningeal hemorrhage. The possibility of a surface clot by contre-coup has been denied by many surgeons. I have here two specimens which I believe will settle this long-disputed question.

In the first of these cases, a patient was found by a policeman on the street, at eight o'clock in the evening, in a condition of what was supposed intoxication. He walked to the station-house, and was locked up for the night, and at ten o'clock the following morning he was brought before the police justice in court, and was sentenced to ten days for intoxication. At eleven o'clock he was returned to the station-house, awaiting the time to be sent to the Island. While in the cell, a few minutes after his arrival, he became unconscious, an ambulance was summoned, and he was taken by Dr. Rau to the Ninety-ninth Street Hospital. I saw the patient that day, and from the history of the injury and the paralysis, I diagnosticated meningeal hemorrhage. The patient was anæsthetized and the uninjured scalp was incised, exposing to view a linear fracture. The trephine was applied, and a large epidural clot was discovered. The dura mater was torn, and the brain substance lacerated. The wound was dressed antiseptically. In fourteen hours the patient died. The autopsy revealed the presence of a second epidural clot which was almost opposite, and was the result of contre-coup. The scalp over the skull corresponding to this clot was normal as upon the opposite side.

The second case was also seen by Dr. Rau, the house surgeon of Ninety-ninth Street Hospital. The patient was brought to the hospital in an unconscious condition with general paralysis. The case was supposed to be a fracture at the base of the skull. The patient died the next day, and the autopsy showed a linear fracture of the parietal bone upon one side, and extending to the middle fossa, under which fracture was a large epidural clot, and upon removing the calvarium another surface clot was found at a point directly opposite to the fracture. This fracture did not extend upon the other side of the skull, and the clot here was also the result of an injury by contre-coup.

These two specimens settle the important question whether a meningeal hemorrhage may be produced by contre-coup. The diagnostic points of epidural meningeal hemorrhage by contre-coup, or by trau-

matism without fracture, suggest operative interference in these cases.

The presence of symptoms of cerebral irritation, followed by unilateral paralysis, with a slow tense pulse, the Cheyne-Stokes respiration, accompanied by a sudden rise of the temperature due to disturbance of the heat centre, form a group of symptoms, which, if they were preceded by a short interval after the injury in which no serious manifestations of brain lesion were present, make it extremely probable that an intracranial meningeal hemorrhage had occurred.

This group of symptoms appearing at the time, and in the order mentioned, with or without any fracture, would indicate the application of the trephine over the seat of pressure, the removal of the clot, and the ligation of the middle meningeal artery through the opening made in the skull by means of a tenaculum applied in the manner already described. To some this may seem too bold; but when the fact is considered that it has been demonstrated that formerly nine-tenths of these cases perished under the expectant plan of treatment, and when further it is considered how safe the operation of trephining is in the hands of antiseptic surgeons, it would seem that a surgeon might be derelict in his duty if he did not resect a portion of the skull and remove the clot and arrest the bleeding. I have applied this principle in several cases with success where I trephined in head injuries, suspecting, but having no knowledge of a fracture of the internal table, and have removed many pieces from the inner surface of the skull.

*Fat Embolism.*—This interesting complication in the treatment of fractures in general was first described fully by Wagner and Zenker. Fat embolism means the entrance of fluid fat probably derived from the medulla of the bone into the veins in the immediate vicinity of the fracture, and through these channels into the capillaries of the brain, spinal cord, lungs, kidneys, and other essential organs.

The presence of fluid fat in the blood had been described as early as 1836 by Dr. R. W. Smith; but the clinical importance of this symptom was not investigated until recently by Bergman, Czerny, and Scriba. Déjérine has experimentally produced in the lower animals fat embolism by inserting laminaria-tents into the medullary cavity of the long bones. The occurrence of fat embolism in fractures is undoubtedly much more frequent than has been formerly supposed, and without doubt, also, the dangers of this condition have been over-estimated. Fat embolism has been fatal in laceration of the liver where the patient had a fatty liver, as in alcoholic or in tuberculous patients; but these cases are altogether different from the fat embolism which is found in connection with a fracture. Flournoy pointed out three essential conditions necessary to the development of this complication. He demonstrated that there must exist large openings in the veins, free fluid fat, and a *vis a tergo*, which is found in copious extravasations of blood.

The symptoms of fat embolism appear within the first three days as a rule, and consist of those of secondary shock. They occur before the time at which venous thrombosis or pulmonary embolism would be expected to arise. Great dyspnœa associated with the Cheyne-Stokes respiration, and great irregularity of the heart with a sudden rise of temperature, together with twitchings of the muscles, as well as paralysis of certain muscles, have been observed in these cases. There have been no metastatic abscesses found in the cases of fat embolism where a report of the autopsy has been published. In several cases I have been able to find an abundance of fat globules in the urine following a train of symptoms such as has been mentioned.

I have seen these symptoms appear after osteotomy where the condition of the wound itself was perfect. Fat embolism is said to be found more frequently in fractures in the aged, because the medulla contains much fat, and not often in children, owing to absence of fat in the medulla.

The treatment which has been recommended in this condition, with a view of dissolving the fat, is the administration of ether, and also a free use of the diffusible stimulants. In cases of cyanosis with great dyspnœa, artificial respiration has been suggested. I have never seen a case of fat embolism where it became necessary to resort to these severe measures, but the attacks have been of short duration, and have been followed by the presence of fat in the urine. In pathological specimens, osmic acid stains the tissues so that the fat appears in black globules of irregular shape, but in the urine the fat globules are detected by the microscope.

I have at present under treatment, in Bellevue Hospital, a case of simple fracture of the fibula, in which the complication of fat embolism has arisen. On the 5th of October the patient sustained a fracture of the fibula, and upon admittance to the ward was in good condition. Two days later she suddenly developed a temperature of 104½° F., associated with vomiting and diarrhœa. Her pulse was rapid and feeble. The urine, which upon admittance was normal, now became bloody, contained casts, and was loaded with fat globules. The examination of the urine was made by Dr. Houghton, who exercised great care in the investigation. The patient grew better under treatment with Hoffmann's anodyne and ammonium carbonate, and her condition now is in every way satisfactory.

This group of symptoms must not be mistaken for shock following a fracture, nor for pulmonary embolism. The former condition may be said to be present three hours after the fracture, fat embolism three days after the fracture, and pulmonary embolism three weeks after the fracture. For convenience, I have arranged these complications in the order in which they are most likely to occur, and by associating these conditions which simulate each other by the time in which they appear, no mistake in diagnosis is likely to arise.

*Insanity following Fracture.*—There have been a good many cases of insanity following traumatism of the head, and this is a generally accepted view among specialists in nervous diseases. To trace the etiology of insanity to a fracture of the skull is more difficult. I have now a patient in an asylum as a re-

sult of a fracture of the skull, and I understand that he is hopelessly insane. I have under observation, also, a case of imbecility and idiocy which resulted from a pistol-shot wound of the skull. In another case of severe and persistent headache extending over a period of six years, I trephined over the site of a previous fracture, and found the dura thickened and the seat of a pachymeningitis. The removal of the depressed bone relieved the intracranial pressure, and the patient—whom I now see from time to time—has never had any return of the agonizing pain in her head, and her mental condition seems much improved. This patient is now at work, and expresses herself as perfectly well.

In three cases of traumatic epilepsy attended with more or less mental disturbance I have used the trephine with most excellent results. I am aware that, as a rule, trephining is not uniformly successful in epilepsy, and my own experience has led me to expect little from the operation in those cases where there is not a well-marked depression produced by a fracture.

There is a case reported recently by Dr. McDonald, in which insanity followed a compound fracture of the skull, and where the patient recovered completely after an operation. The depression in this case was situated over the first frontal gyrus marked 12 by Ferrier. There is also a case reported by Dr. McEwen, of Glasgow, where insanity was produced by a fracture of the skull with depression, and where the patient recovered after trephining. Schroeter mentions a case where a patient became insane on account of a fracture of the skull. Dr. Spitzka was kind enough to show me in his collection several interesting specimens bearing upon this point. One specimen was part of a brain belonging to a patient who was struck by a fragment of a shell at Chancellorville. He became insane and died after some time. The injury was in the median line, the dura was thickened and adherent, and there was milky opacity. The lepto-meninges were thickened, the sulci beneath gaped, and the perivascular spaces were enlarged. Dr. Spitzka also gave me the notes of another patient who became insane after a depressed fracture of the skull produced by the explosion of a shell at the battle of Bull Run. At the autopsy there was found periencephalitis corresponding to the indentation upon the inner surface of the skull. The dura was universally adherent on both hemispheres, and there were hæmatomatous efflorescences in both dural sacs. In another case where a patient had been kicked by a horse on the left frontal region over the superciliary ridge, the depression internally was an exaggeration of the mamillary eminences, and they stood forth like spiculæ of bone. The hemispheres were unsymmetrical, and a well-marked depression was seen upon the frontal lobe beneath the seat of fracture.

Many other cases might be found where the cause of insanity is due to an old and unrelieved depressed fracture. In all these cases depression existed, hence the important point of elevating at the time of accident, even though no symptoms exist. A study of these cases shows clearly that insanity may result if a depression is left in the skull in a recent injury, and when it is demonstrated how free from danger is trephining in careful hands, and what serious conditions may follow neglect to perform this operation, it seems clearly evident that in every case of marked depressed fracture, with or without symptoms, the surgeon should elevate the bone for fear that some form of mental disturbance may follow.

The kind of insanity which follows in these traumatic cases is that form which is attended with great irritability and mental excitement, and which is also accompanied with fits of violent temper and passion. These phenomena are suggestive in depressed fracture, and call for surgical interference in a class of cases where, until recently, no relief could be extended to the sufferers.

*Malignant Disease.*—The question of development of malignant tumors at the seat of fracture is an exceedingly important one in surgical pathology. Gross, of Philadelphia, has pointed out the important fact that almost half of the cases of malignant bone disease can be traced to traumatism. His valuable contribution upon this point is worthy of careful study. I have been able to verify in my own experience the conclusions which Gross draws from a study of a large number of his own cases.

During the last month I operated upon a child with an immense sarcoma developed upon the occiput. The child sustained a heavy fall upon the back of the head six months previous and a large hæmatoma was at once developed. The hæmatoma was not incised and in all probability a linear fracture existed beneath it. For some weeks after the injury there was nothing special except the presence of the hæmatoma; but the tumor then began to grow very rapidly aud in less than six months from the receipt of the injury the sarcoma was much larger than the child's head. The patient died some weeks after an incomplete operation for its removal. No autopsy was permitted; but at the time of the operation I found the skull perforated and the brain exposed. The tumor was examined by Dr. McNamara, who pronounced it to be a sarcoma. The history of the case and the nature of the fall, make it extremely probable that a linear fracture existed and from this point the malignant disease took its origin.

I have here a beautiful specimen illustrating the clinical fact that a fracture may be the starting-point of sarcoma. The patient from whom this thigh was removed was treated by Dr. Robb for a fracture of the femur just above the condyles. Some six months after the accident a rapidly growing sarcoma developed at the seat of fracture. Dr. Robb sent the patient to me for an amputation at the hip-joint. The patient would not, for a long time, consent to the operation, and when he finally acceded the tumor had made great progress and had seriously affected his general health. He did not survive the operation, but died within twenty-four hours.

I have had a large number of cases of malignant disease which could be traced to traumatism; but to trace the traumatism directly to a fracture of the bone is not a common occurrence.

The variety of tumor which develops is sarcoma, as carcinoma is, as a rule, a metastatic disease in bone. True sarcomata may be central—that is, growing from the cancellous tissue of the medullary canal of the bone; or else periosteal, in which case the starting-point is from the covering of the bone. These tumors grow very rapidly, and soon infect the patient.

The prognosis, while grave, is not necessarily fatal provided the tumor is recognized early and the operation is performed far from the seat of disease. This subject of the influence of fracture upon the development of sarcoma is one to which no extensive investigation has as yet been made and it is one which offers a rich field for original research.

Epithelioma also may develop indirectly as a result of a compound fracture; but this malignant growth has its origin from the soft tissues in connection with a sinus leading down to necrosed bone. If a sinus is not healed it becomes lined with epithelium and a discharge of ichorous pus through it from time to time sets up an irritation in the epithelial-lined sinus and a proliferation of epithelial cells takes place and epithelioma may in this way secondarily develop. While the epithelioma is not directly in connection with the seat of fracture as is the case in sarcoma, nevertheless the disease may have its origin in conditions arising from sequestration in a compound fracture. The closure of such sinuses in connection with necrosis following a fracture should always be aimed at by the surgeon. Early amputation before glandular enlargement at a point distant from the disease may offer a favorable prognosis.

*Tenotomy.*—Two years ago I called attention to this procedure in the treatment of compound fractures, and in a number of cases since then I have been impressed with the value of this operation in all oblique compound fractures where the fragments overlap. Division of the tendo Achillis relieves at once any contraction of the muscles, permits the fragments to be placed accurately in coaptation, and the physiological rest thus secured affords great comfort to the patient, and a valuable means of fixation to the fracture during the first ten days. The tenotomy in no way increases danger to the patient, and is easily performed. The foot should be placed in its normal position, as recommended in Dr. Reginald Sayre's most excellent monograph upon fixation of the foot, immediately after tenotomy for club-foot.

The operation is not limited to the tendo Achillis, but may be employed with advantage in exceptional cases upon the hamstrings, in fractures of the tibia or fibula close to the knee-joint. It may also be found a most valuable adjuvant after osteotomy in the anterior curvature. The same may be said in reference to the tendons of the arm and forearm, and even in fractures of the clavicle, if the clavicular origin of the sterno-cleido-mastoid muscle tends to pull the inner fragment upward and away from the outer fragment. I believe there is much to be gained by the adoption of this simple device in the treatment of many cases of compound fracture of the extremities where there is difficulty in reduction, and from the excellent results obtained in those fractures where this procedure was resorted to I can commend it as a most valuable measure.

In vertical fracture tenotomy is of no avail; but in several cases of compound fracture of the tibia, where the solution was parallel with the long axis of the bone, with considerable separation of the halves, I have found great difficulty in bringing the two long vertical fragments in contact. The Signourini horseshoe tourniquet proved a most valuable instrument in closing the long fissure. The instrument overcomes the vertical separation just as tenotomy overcomes the oblique displacement. The pad can be applied to one side of the bone, and pressure can be made by applying the other pad over a thick plaster bandage. The screw can be tightened gradually, and in a few days the bone can be approximated, and the instrument discarded. This is a safe and more satisfactory instrument than the apparatus devised by Malgaigne.

*Healing by Schede's Method.*—In a number of severe cases of compound fractures of the leg and skull I have observed some beautiful illustrations of this newly described method of repair. In a recent paper read before the German Congress of Surgeons this subject was ably discussed by Schede, and the views which he enunciated are somewhat at variance with the generally accepted opinions upon this pathological question. It has usually been taught that blood-clots in wounds are obstacles to repair by primary intention, and that these clots act as foreign bodies. In one case of severe compound fracture of the leg there was great hemorrhage between the fragments, and a large space left between them, which was filled with fluid blood and blood-clots. I divided the tendo Achillis to counteract the contraction of the muscle, and also in order to bring the fragments in better apposition. The leg was then dressed with the most rigid aseptic precautions, and the blood-clots became organized and furnished a most valuable medium of union. The fracture healed by primary intention, and the patient made a most excellent recovery.

Fluid blood and blood-clots, if perfectly aseptic, are valuable adjuvants in the repair of compound fractures. They are, however, most potent sources of evil if any possible infection reaches the clot through any carelessness of the surgeon. It is a most valuable contribution to the treatment of compound fractures, if the blood which escapes between the ends of the fragments can be in the future utilized as a means of hastening and perfecting union by primary intention. The reason why so important a principle in surgical pathology has been so long unknown is explained by the fact that blood-clots, until rigid asepsis was established, were recognized sources of septic inflammation. If all the surrounding parts in every compound fracture are made aseptic, blood-clots and fluid blood can be utilized for the purpose of healing. Anything short of surgical cleanliness will convert these clots and the blood into dangerous agents of infection.

*Amputation.*—Amputation of the member in compound fracture was resorted to formerly with great frequency in hospital practice. Until the in-

troduction of reliable and scientific antiseptics, pyæmia destroyed the life of almost every patient suffering from compound fracture who was brought to a large metropolitan hospital. The time is within my own recollection when amputation was immediately performed as routine treatment in Bellevue Hospital upon the admittance of a severe compound fracture to prevent blood poisoning; and this operation was considered by surgeons as offering to the patient the best chance of recovery. At the present time limbs are saved which were then sacrificed, and it is a rare event to witness an amputation in compound fracture. Extensive fracture of the bone with protrusion of the fragments through the soft structures would not now form an indication for amputation, unless the soft structures were badly lacerated.

A fracture into the ankle- or knee-joint was, until recently, considered an injury requiring amputation; but now the joint is washed out and provided with free drainage, and the fracture repairs, and the function of the joint is fully restored. I have recently treated a case of compound fracture and dislocation into ankle-joint, with protrusion of astragalus out of the wound. This bone was returned to its proper place, and free drainage was afforded after irrigation of the joint. The joint was perfect in all its movements after a fortnight. I have two cases now under treatment, but it is too soon to predict as to the function of the joints. Formerly the loss of a few inches of the shaft of the bone called for primary amputation. This no longer offers an indication, for the bones are brought together by silver wire, and though the limb may be shorter than the opposite one, the member is still retained and elevation of the shoe compensates for any slight irregularity in the gait. In one case which I treated where four inches of the tibia were removed, the patient made an excellent recovery, and to day has a better leg than any artificial one. In this box is the piece of the shaft which was removed from the patient to whom reference has just been made.

The limits to which amputation in compound fracture may be resorted to, are exceedingly narrow and restricted, and this conspicuous clinical fact is one of the most notable steps in the march and advance of modern and conservative surgery.

Another important point in reference to an amputation in compound fracture is the proper line of treatment to be pursued up to the time of the operation. It often happens that a patient is suffering too profoundly from shock to make it expedient to operate. In these cases I have found great benefit to be derived from deferring the amputation, even several days, until the condition was such as to justify the operation. Formerly this could not be done without subjecting the patient to a greater risk from septic infection than would be incurred in an amputation during shock. If the wound is made at once aseptic and compresses be placed over the fracture to control the hemorrhage, and these compresses do not extend any higher than the wound itself, the amputation can be deferred. It is important that these compresses be applied only over the wound, and that no form of compress or bandage be applied to the limb above the injured part, for if this is done there is danger of dry gangrene in the flaps above the wound. In one case this accident occurred from a neglect of this rule, though the compression was made before the patient was brought to the hospital, and in no way could any neglect be attached to the hospital authorities.

The complete history of the five hundred and sixteen cases of compound fractures I have here before me on this table for inspection and examination. Each case is given in full with the name of the patient, the date of his or her admittance to the hospital, the age, a description of the injury, the treatment in full, and the result. I have also here in this large roll of papers most of the temperature charts. In these glass bottles are the pieces of skull which have been preserved, and are labelled to correspond to the cases given in the table. Upon this table are the bones of the leg, thigh, arms, and forearm in which amputation was performed, also the pieces of bones from the joints, which pieces were removed by resection. I have preserved these specimens with great care. It is obvious that time will not permit the reading of these histories, amounting to 516 in all, and therefore I can only give a summary which will include them all. I would state, however, that anyone desiring to take the time is at liberty to examine each case.[1]

The list of compound fractures of the *skull* contains 107 cases, 68 of which recovered and 39 of which died; 31 of the fatal cases died within 48 hours after the receipt of the injury. Of the remaining 8 cases, 1 died one month after the operation of trephining from exhaustion and inanition, with the wound healed. The autopsy, which was made by Dr. Grauer, showed nothing in the brain to account for the death. Of the remaining 7 cases, 3 died from cerebral softening, as in apoplexy, disconnected with the original wound, and 2 cases from irreparable damage to the brain, one being extensive cerebral laceration due to the lock of a gun driven through the skull, the other being a fracture at the base of the skull. The remaining case died in 52 hours from lepto-meningitis following the operation of trephining, in which the dura mater was found injured.

The list of compound fractures of the *arm* contains 15 cases, 14 of which recovered and 1 died. The fatal case was a railroad injury, with great crushing of the parts, and the patient died in 48 hours, having never rallied from shock.

The list of compound fractures of the *forearm* contains 23 cases, of which 22 recovered and 1 died. This fatal case, which was complicated with extensive burns, never rallied from shock and expired within 24 hours.

The list of compound fractures of the *thigh* contains 53 cases, of which 48 recovered and 5 died. In the fatal cases death occurred within 48 hours.

The list of compound fractures of the leg contains 150 cases, of which 15 required primary amputation; of the remaining 135 cases, 125 recovered, 2 were

[1] [The full history of these cases, in tabular form, accompanied this paper, but we regret that the large amount of space which they would occupy precludes their publication in THE NEWS.—EDITOR.]

transferred at their own request from hospital immediately after admittance, and 8 died, and none of these 8 fatal cases survived forty-eight hours.

The list of compound fractures of the bones of the *hand and foot* shows 37 cases. Many of these cases of compound fracture were complicated with great laceration and crushing of the soft tissues. These injuries were caused by heavy weights falling upon the hand or foot, or by circular saw or railway accidents. In many cases the damage to the soft parts was very great. The joints were opened, the tendons exposed, the soft parts crushed, and the tissues generally torn and lacerated. These cases all recovered, with the exception of one which terminated fatally from other injuries and to which reference will be made later.

The table of compound fractures involving the *shoulder-, elbow-, and wrist-joints*, contains 23 cases, all of which recovered.

The table of compound fractures involving the *hip-, knee-, and ankle-joints* contains 43 cases, 4 of which required primary amputation, and 3 of which were fatal. Of the three fatal cases one died of tuberculous meningitis some weeks after a resection of the hip-joint, another died within twenty-four hours from shock, and the third died a week after wiring of the patella from Bright's disease which caused uræmia. The joint wound was aseptic. In none of the three fatal cases involving these major joints could septic infection have been a cause of death.

The table of compound fractures involving the *carpal and metacarpal and the tarsal and the metatarsal joints* contains twenty-four cases, all of which recovered.

The table of compound fractures of the *upper and lower jaws* contains 28 cases, 4 of which were fractures requiring suture by silver wire, and all of which recovered.

The table of compound fractures of the *ribs and nasal bones* contains thirteen cases, twelve of which recovered; the one fatal case was that of a patient who received a compound comminuted fracture of all the bones of the face and some of the skull, the result of the fall of a heavy derrick upon his head. The patient died in thirty-six hours.

The table of compound fractures of the *ilium and the malar bones* contains three cases, one of the ilium and two of the malar bones, all of which recovered.

A final summary of all of these cases of compound fractures of the different bones of the body is as follows:

| | |
|---|---|
| Skull | 107 |
| Arm | 15 |
| Forearm | 23 |
| Thigh | 53 |
| Leg | 150 |
| Fingers and toes | 37 |
| Fractures involving shoulder-, elbow-, and wrist-joints, result of accident or of operation | 23 |
| Fractures involving hip-, knee-, and ankle-joints | 40 |
| Fractures involving carpal and metacarpal, tarsal and metatarsal joints | 24 |
| Superior and inferior maxillary bones | 28 |
| Ribs and nasal bones | 13 |
| Compound fractures of the ilium and malar bones | 3 |
| Total | 516 |

In this total of 516 cases of compound fractures, produced by traumatism or by operation, there were 59 deaths, 19 primary amputations, and 2 cases where the result was unknown on account of the removal of the patients, at their own request, from the hospital immediately after their admittance. In the 59 fatal cases, 49 died within forty-eight hours after the accident and during shock, and consequently these deaths should not be included in any figures to ascertain the percentage of mortality, because the patients died before any plan of treatment could be adopted having reference to the repair of the fracture, or to the prevention of septic infection.

The remaining ten deaths occurred in the following manner: one from tuberculous meningitis following some weeks after a resection of the hip-joint, so that this case died from other causes than septic infection; another patient died from uræmia in chronic Bright's disease one week after wiring the patella, and the wound was aseptic, so that this case died from other causes than septic infection; another case died one month after trephining from exhaustion and inanition, with the wound perfectly healed by primary intention, and at the autopsy with no evidences in the brain of pathological changes indicating sepsis as the cause of death, so that death in this case cannot be attributed to septic infection; two other cases died from irreparable damage to the brain, in one of which a lock of a gun was driven through the skull into the brain, and in the other a fracture at the base was found at the autopsy in addition to the fracture of the parietal bone, so that death in neither of these two cases was due to pyæmia or septicæmia; three other cases died from cerebral softening which was situated at a distance from the original wound.

In reference to these cases of cerebral softening, following the injury, a word of explanation seems pertinent. These circumscribed areas of softening in every respect resembled the changes which are found after apoplexy. There was no local evidence of septic infection, and in all the three cases the autopsies were made by experienced pathologists, who coincided in this opinion. The situation of the softened areas at a point distant from the original wound, and the changes—*i. e.*, hemorrhage and softening, the perfect aseptic and healed condition of the external wounds, which are identical with those found in cerebral apoplexy—indicate that these three cases are not of septic origin from the wound.

The cerebral softening appears to be due to a molecular disintegration or laceration of brain tissue from traumatism, and this disturbance of the nutrition produces a metamorphosis and the liquefaction takes place. The external surface of the dura mater seems to possess power to prevent the entrance of septic microörganisms into the cerebral substance; while the internal surface of the dura mater, owing to its proximity to the arachnoid space, is exceedingly delicate and susceptible to the slightest influence of any septic material. Experimental work in this direction indicates that such points of softening may have their origin in traumatism and not necessarily be due to sepsis. I believe that these three cases are explained in this way, and therefore these cases may

be eliminated from the list of deaths due to septic infection derived from the wound in the skull.

I feel certain that these softenings were not the result of infection from the wounds; because the wounds were aseptic. To convince myself further of the accuracy of this conclusion I trephined the skull of a dog and planted upon its dura mater septic micrococci, which were furnished to me from cultures belonging to Dr. Biggs. Though the micro-organisms were septic, they were incapable of developing a cerebral abscess through the dura mater or even producing a meningitis.

Such an experiment, while it is not conclusive, of course carries additional evidence in favor of the non-septic origin of such cerebral softenings, though they may be due to the presence of some such micro-organisms as bacilli tuberculosis; but at the same time the traumatism may have acted as an exciting cause to develop an abscess in tissue already impregnated with a pathogenic germ. This explanation places a higher value upon antiseptic surgery, and it serves also to illustrate at the same time that an operation like trephining may be a brilliant success so far as the operation is concerned; but yet the patient perishes from causes which are as yet beyond the complete control of the surgeon.

There is still an unoccupied field for further investigation and research in this domain of surgery, and surgeons must turn the direction of their studies to those causes of death which are not connected with the details of antiseptic surgery. Perfection has been almost reached in the technique of the operation of trephining, but as yet there are circumstances which are not controlled by the practical surgeon and to a study of these causes future scientific surgery must engage.

Finally, to refer to the two remaining deaths, which may be fairly considered as septic. One of these cases died from lepto-meningitis fifty-two hours after the trephining, and the last case in ninety hours after a crushing of the foot, in a patient over sixty years of age. This makes only two deaths which could be ascribed to septic infection.

Deducting from the original 516 cases the 49 cases which terminated fatally within forty-eight hours, and the 19 cases which required primary amputation, also the 2 cases which were immediately transferred at their own request from the hospital, there remain 446 consecutive cases of compound fractures, with only 2 deaths. This shows a rate of mortality of less than one-half of one per cent. If now the 61 cases of compound fracture of the bones of the hands and feet be excluded as too insignificant, in accordance with the custom among all surgeons in their statistical reports of compound fractures, there still remain 385 consecutive cases of compound fractures, including, to the best of my knowledge, every case which has come under my treatment, with but one death, which gives a still less percentage of mortality, which is less than one-third of one per cent.

In order to appreciate what progress surgery has made during the last half century in the treatment of compound fractures, it is interesting to examine hospital reports embracing this period. Before the introduction of antiseptics the best statistical reports of compound fractures are those of Norris. He showed that in the Pennsylvania Hospital, between the years 1839–1851, there were treated 116 cases of compound fractures of the leg and thigh (excluding those cases requiring amputation), with 51 deaths, thus giving a rate of mortality of 44 per cent. This is only an approximation, as the table does not state whether any amputations were primary or secondary. In the New York Hospital, during the same period, there were treated 126 cases of compound fractures of the leg and thigh (excluding those cases requiring amputation), with 61 deaths, thus giving a rate of mortality of 48 per cent. The previous remark also applies to this percentage, but in neither case would the percentage be notably decreased.

A decade later, from 1860–1876, there were reported from the surgical clinics of Vienna and Zurich, by Billroth, 180 cases of compound fractures. Excluding those cases of amputation, there is a mortality of 31 per cent. from septo-pyæmia. In the Obuchow Hospital Reports of St. Petersburg there are reported 106 cases of compound fracture, with a mortality of 68 per cent. No particulars are given, in this high death-rate, as to whether patients died from shock, amputations, etc. In Guy's Hospital, from 1841–1861, there were reported 208 cases of compound fractures, with 56 deaths, thus giving a mortality of about 26 per cent. In other words, it is shown by these figures approximately that, before the introduction of antiseptics into hospital practice in the treatment of compound fractures, that the rate of mortality in the best tables varies from 20 to 60 per cent.

If now some statistics are examined after the introduction of antiseptics, with a view to ascertain their influence npon the rate of mortality, one is at once confronted with an astonishing fact. If, for example, Billroth's table is referred to after the use of antiseptics, the death-rate is reduced to one-tenth of what it had been formerly in the treatment of compound fractures. The influence, therefore, of antiseptics has caused the death-rate to fall from twenty to sixty per cent. to about four per cent. within a period of a few years.

In the present report of 516 cases of compound fractures, if we compare the fractures of the *extremities* only, as has been the case in the above tables, there is no death from septo-pyæmia, and thus the rate of mortality from blood-poisoning is now reduced from sixty per cent. to a figure which is represented by a cipher. It may be said, therefore, that pyæmia and septicæmia, which destroyed as many as sixty per cent. of human lives in cases of compound fractures, have been practically eliminated as causes of death.

The science of surgery has at last demonstrated to the world that it has fairly met this demon of destruction, and conquered him; and, in conclusion, in referring to this great reduction in mortality, an inquiry is not inappropriate as to the means which has brought it about, and also as to the special influence to which it is due. Without doubt, the science

of bacteriology has largely contributed to this object, and this building in which we are now convened, with its spacious laboratories devoted to this study, attests the importance in which this work is held, and also without doubt the one to whom the profession is indebted for the practical application of this science is Sir Joseph Lister, whose name can never be disassociated with the march and progress of surgery.

## A PARTIAL STUDY OF THE SEASONAL RELATIONS OF CHOREA AND RHEUMATISM.[1]

BY MORRIS J. LEWIS, M.D.,
OF PHILADELPHIA.

THE present paper is based upon a study of the seasonal relations of chorea and rheumatism, and for this purpose the weather at Philadelphia for the years 1876–1885, inclusive, has been investigated, together with the number of storm centres, or centres of low barometer, passing across or near the United States. These data were obtained from the monthly weather reports, and from the records kept at the signal station in this city, which have been kindly placed at my disposal.

Recent investigations undertaken by me in 1881, in regard to the relation existing between the number of cases of chorea and the varying states of the weather, showed such a curious resemblance between the chorea and storm tracings that I deemed the subject worthy of further study.

The former work is embodied in Dr. S. Weir Mitchell's *Lectures on Diseases of the Nervous System, especially in Women*, and the statistics there mentioned were based upon the study of the months of onset of 170 separate attacks of chorea occurring in the years 1876–1880 inclusive, but at that time the storm records of the years 1878–1880 inclusive only were available, during which time 87 of the above-mentioned 170 attacks occurred. For the present study I have collected all the separate attacks of chorea which have been noted at the clinics of the Orthopædic Hospital and Infirmary for Nervous Diseases during the years 1876–1885 inclusive. These number in all 437, and necessarily include those previously studied.

As it is a well-recognized fact that a relationship exists between chorea and rheumatism, which, it is needless to say, is as yet imperfectly understood, I thought that it would be of much interest to compare with the cases of chorea the months of onset of attacks of acute inflammatory rheumatism occurring during the same period, and for this purpose have carefully studied the notes taken at the Pennsylvania Hospital, which have been placed at my disposal; from these I have collected 467 separate attacks of rheumatism, having excluded those that are at all doubtful, and those which occurred among sailors at sea, who were afterward brought to this port.

It must be borne in mind that while the records of the weather are complete as far as they go, the cases of disease here reported are but a small portion of those that must have occurred in this city during that decade; but, despite this fact, there is every probability that the percentage of chorea cases per month is practically correct, as may be seen by the almost exact resemblance between the two tracings of 170 and 437 attacks, respectively; Nos. 3 and 5.

To study properly the effect of the weather upon disease, there should be a *daily* record of both weather and disease taken, as has been so carefully done in the relation of pain to weather by Captain Catlin, recently reported by Dr. Mitchell before the College of Physicians (*Transactions of the College of Physicians of Philadelphia*, vol. vi.). In the diseases in question, however, the *day of onset* could only be obtained with certainty in a few cases, and, therefore, it was necessary to be satisfied with the *month of onset;* this, of necessity, destroys, to some extent, the value of the observations, but sufficient of interest remains to justify the present study. By taking the average of too long a period of weather the effect of sudden changes and all irregularities are lost sight of, and in this way some facts of importance may be overlooked.

In the present study the monthly average of the weather for ten years has been taken and compared with the monthly average of disease, but the peculiarities about to be spoken of are best seen when a table is made which shows the mean of the ten years in question, month by month.

The accompanying chart is so arranged by repeating the first half of the year, that any portion of the tracings may be studied in unbroken sequence.

Tracing No. 5 represents the *months of onset* of 437 separate attacks of chorea, and shows the actual number for each set of months, or the average number for each set, according to the manner of reading the figures; thus, January shows 36 attacks, which means 36 attacks for the ten Januarys, or 3.6 cases as an average for each January.

This tracing will be seen to be lowest in October and November, 18 and 19 attacks, respectively (4.1 and 4.3 per cent.); it then rises rapidly, until 36 attacks in January have been reached (8.2 per cent.), falls slightly in February, and again rises, reaching its highest point in March, which shows 67[1] attacks (15.3 per cent.); the line then falls in April to 38 attacks (8.6 per cent.), and after two more rises—one in May, 47 attacks (10.7 per cent.), and the other in July, 46 attacks (10.5 per cent.)—falls almost perfectly regularly to its lowest point in October. Before attempting to find an explanation for the high percentage in March, I will again draw attention to tracing No. 3, which represents the 170 separate attacks previously reported; this will be seen to resemble, in every essential particular, the tracing we have just studied. These cases I have included in the present paper. Nothing especial is seen in comparing with the chorea tracing, that of the *mean relative humidity* (No. 9), or that of the *mean barometer* (No. 2), except that there appears to be an increase in the number of attacks of chorea with a fall of the mean relative humidity and barometer tracings; neither is much seen in comparing

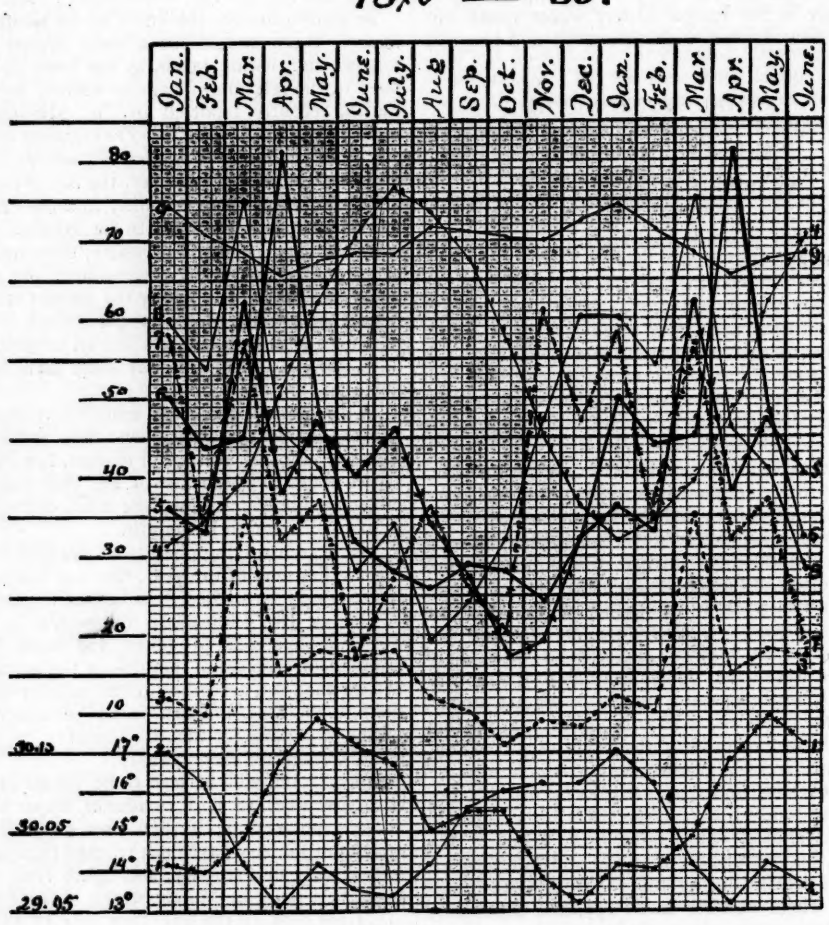
[1] Read before the Philadelphia Neurological Society, October 25, 1886.

[1] Owing to a mistake in the chart, March shows 62 attacks instead of 67.

with it the mean daily range of the thermometer (No. 1), which shows the variableness in temperature of the different months; this is greatest in May, and least in December.

to the chorea tracing. These lines are not shown on the chart.

The probable cause of the resemblances noted becomes more apparent when the storm tracing is




Tracing No. 1, mean daily range of thermometer.
Tracing No. 2, mean barometer.
Tracing No. 3, 170 separate attacks of chorea, occurring in 1876–80.
Tracing No. 4, mean thermometer.
Tracing No. 5, the months of onset of 437 separate attacks of chorea.
Tracing No. 6, the months of onset of 467 separate attacks of acute inflammatory rheumatism.
Tracing No. 7, number of cloudy days.
Tracing No. 8, storm centres passing within 400 miles of Philadelphia.
Tracing No. 9, mean relative humidity.

A resemblance begins to be apparent between the chorea tracing and the tracing of cloudy days (No. 7.) The mean temperature tracing (No. 4) does not throw much light on the subject.

The tracings of the number of days on which rain or snow fell and that showing the amount of rain or melted snow in inches also show a slight resemblance

studied, because these meteorological factors may be considered as component parts of a storm.

Tracing No. 8 represents the number of storm centres (or centres of low barometer) passing within a circle of 400 miles radius described around Philadelphia as a centre.

In studying the storms, circles of varying radii

were thus drawn around Philadelphia and the number of storm centres, as marked on the weather bureau maps, counted in each, but the closest resemblance appeared to be with the number of storms passing within the 400 mile circle, and for this reason it is the only tracing that I have placed on the chart. In the former study the great resemblance between the chorea tracing and the storms within the 750 mile circle was pointed out, but the result of the present study being more exact and more extended is the one to be most relied upon.

The smallest number of storms passing within the 400 mile circle occurs in August, a rapid rise of the tracing then takes place until December and January are reached, then there is a slight fall in February, immediately followed by a rise to the highest point in March, after which there is an irregular fall until the low point in August is reached.

Any one looking at these two tracings, as shown in the chart, will have to acknowledge that the marked resemblance which exists is more than accidental, but to decide which factor in this complex disturbance, which we call a storm, is the baneful one, or in what manner it acts, is difficult.

Let us now turn to another disease, and study its tracing, and for this purpose acute articular rheumatism has been selected on account of its well-recognized relation to chorea.

Line 6 represents the months of onset of 467 separate attacks of this affection, and, like the chorea tracing, represents the actual number for each set of months, or the average per month.

November shows the fewest attacks, viz., 24, or 5.1 per cent.; from this point the tracing rapidly rises until January, with 50 attacks (10.7 per cent.), is reached, then falls slightly in February and March, to rise to its greatest height in April, 81 attacks (17.3 per cent.); from this point it rapidly falls to 32 attacks in June (6.8 per cent.), and then gradually and slightly irregularly falls to its lowest point in November.

While the chorea tracing shows a strong tendency to keep pace, month by month, with the irregularities of the storm tracing, that of rheumatism while also strongly resembling the latter, may be seen to be exactly *one month later*, looking as if the effect of the meteorological changes was immediate in the case of chorea (as it is now acknowledged to be in some varieties of neuralgia), and preparatory only in the case of rheumatism.

From the close relationship known to exist between these two diseases, one might be led to suppose that the rheumatism tracing would precede, or at least accompany that of chorea, instead of following it, as this study seems to show.

In Zurich, according to Lebert, as quoted by Senator in Ziemssen's *Cyclopædia*, out of 220 cases of rheumatism during the years 1853 to 1859, the highest percentage occurred in January, 9.5 per cent., and in April, 13.3 per cent., agreeing exactly with the months of highest percentage in this city. A study of the storm records abroad, and their relations to rheumatism and chorea, would be interesting, and probably explain the seeming diversity of opinion.

Many of the statistics of chorea are of but little value in this connection, as the months of application for treatment, and not the months of onset, are given.

The reports of observers in different countries do not agree as to the season of the year in which chorea is most prevalent.

Angel Money (*Brain*, 1882, p. 512) reports the *months of application for treatment* of 224 cases to University College Hospital, and to the Hospital for Sick Children. The greatest number occurred in January, viz., 30 cases, and the smallest number in July, August, and September, viz., 11 cases each. Arranged according to seasons, spring shows 70, summer 47, autumn 44, and winter 63.

Germain Sée (*De la Chorée*, Paris, 1850, p. 460) is the authority for the statement that, in France, chorea is principally observed in the autumn and winter. My cases, arranged according to seasons, show the following order: Spring 152, summer 120, autumn 64, winter 101.

A comparison of the rheumatism tracing of this table with the varying states of the weather, leaving out the storm records, does not explain the reason of the highest point in April. That month shows the lowest mean relative humidity, and also the lowest barometer; but, in opposition to this, the next highest month, viz., January, gives the highest mean relative humidity, and the highest barometer. The temperature in April averages a little over 50°, and January about 32°. The most changeable month is May, so that this cannot be the explanation.

It may be well to explain that the mean relative humidity does not show the *mean actual amount* of moisture contained in the air, but the *mean per cent.* of the moisture that could be held in suspension at the *mean temperature* of each month; the amount representing complete saturation being indicated as 100.

Thus a given bulk of air at a low temperature, if saturated, and ready to drop its moisture, will become dry, if the temperature is raised, although it still holds the same amount of moisture.

This study may be considered as forging one more link in the obscure chain which binds together these two dissimilar affections.

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## A CASE OF PSEUDO-MUSCULAR HYPERTROPHY AFFECTING THE MUSCLES OF THE FOREARMS, ESPECIALLY THE FLEXOR GROUP.

BY FRANCIS X. DERCUM, M.D.,

INSTRUCTOR IN NERVOUS DISEASES IN THE UNIVERSITY OF PENNSYLVANIA.

J. R., aged forty, an Englishman by birth, and a mechanic by profession, of robust and healthy appearance, presented himself at the University Hospital. He complained of a gradual and increasing inability to do his work, which consisted especially in filing. He stated that he had noticed the trouble for several months. An examination disclosed the grip to be somewhat diminished, especially on the right side. The muscles presented nothing unusual

beyond a slight diminution in the response to both faradism and galvanism. The case was thought to be one of muscle-tire from overwork. Intramuscular injections of strychnia, faradism, and massage, were prescribed, together with absolute rest. The treatment, though faithfully carried out, proved absolutely of no avail. After a time, it was noticed that the forearms were increasing in size, and, in fact, the patient complained of a *sense of tightness* over the bellies of the muscles.

After having been under observation for a year, the muscles of the forearms, especially the flexor group, were very much swollen and enlarged. The grip was now decidedly diminished, and became rapidly exhausted by repeated efforts. The quantitative diminution of the electrical reaction was also much more pronounced. These phenomena were all most marked on the right side.

A small piece of muscle was now removed from the flexor group of the right arm, and examined microscopically. It exhibited an undoubted increase in the nuclei. This was noted, not only throughout the tissue, but also in the walls of the capillaries. A preparation stained by osmic acid showed a decided increase in the interstitial fat.

The microscopic examination, of course, left no doubt regarding the nature of the case. There also is no *à priori* reason why pseudo-hypertrophy of the muscles should commence in, or be confined to, the lower limbs, or why it should not begin in the adult. The case before us, however, is certainly very rare. It recalls a number of cases described under the head of *true* muscular hypertrophy by Auerbach, Berger, Benedict, Friedreich, and others. The unsatisfactory character of the evidence on which these cases rest is instanced in the examination of Friedreich's case by Erb, the electrical reactions being normal, with the exception of the ball of the thumb, which had the *appearance of being atrophied.* It looks, indeed, as though these cases presented merely stages in the course of a pseudo-hypertrophy. Again, that pseudo-hypertrophy and muscular atrophy are closely related is shown by the fact of the not uncommon coexistence of both states in the same patient. Mills and Kerlin have published a number of such cases. Again, at the last meeting of the American Neurological Society, Dr. Bishop reported a case of ordinary pseudo-hypertrophy, and presented sections of the spinal cord of the same, prepared by Dr. Amidon, in which lesions of the anterior cornua existed which were in no way distinguishable from those of ordinary muscular atrophy. The lesions, too, so far as the muscles are concerned, it must be admitted, differ rather in degree than in kind. In both cases we have atrophy of the true muscular fibres, and in pseudo-hypertrophy an added interstitial deposit of fat and connective tissue.

The difference in the clinical history of the average case of muscular atrophy and that of the average case of pseudo-hypertrophy must depend on secondary factors not yet determined. It may be well to add that, in the case here described, the muscles of the upper arms and shoulders gave no decided evidence of being implicated. An examination of the legs and trunk yielded a similar negative result.

# MEDICAL PROGRESS.

INFLUENCE OF HIGH TEMPERATURES IN PREGNANCY.—NEGRI, stimulated by the labors of Runge and Doré-Doleris, has made numerous experiments upon guinea-pigs and rabbits with the following results:

1. High temperature may alone be a cause of interruption of pregnancy.

2. Temperatures of from 106.7° F. to even 109.4° F., may often be borne without harm by pregnant and non-pregnant animals, when the exposure is of but short duration, nor do they under these circumstances induce the death of the fœtus.

3. Even when exposure to high temperature is followed by abortion, the death of the fœtus is by no means a necessary consequence.—*Centralb. f. Gynäkologie*, October 16, 1886.

IS ALOPECIA PREMATURA CONTAGIOUS.—At a meeting of the Chicago Medical Society, on October 18, 1886, DR. R. W. BISHOP read a paper thus entitled. He thought this disease due to microörganisms upon the shafts of the hair, and that it is contagious. He has made a series of experiments, assisted by Dr. Oscar Lassar. A typical case was that of a pefectly healthy young man whose head was nearly bald on top. The hair from the diseased surface was brittle and came out easily when pulled. Microscopic examination revealed a large number of fungi on the scalp and the shafts of the hair, the root being free from the parasite. The diseased hairs were cut and mixed with vaseline, which was rubbed on the skin of healthy rabbits, and in two weeks the hair entirely disappeared from the parts which had been rubbed. Experiments were continued, and it was found that the hairs from the inoculated animals possessed increased virulence.

The patient was treated as follows: The head was thoroughly washed for fifteen minutes with tar soap, which was removed with warm water. The head was then exposed to a warm water douche, which was gradually cooled until the water was quite cold; it was then rubbed with a rough towel until dry, and afterward washed with a solution of corrosive sublimate 1 : 500. This was removed, and a half per cent. solution of lithol applied, and, after this, one and a half per cent. carbolic oil was applied very slowly. The treatment was continued daily for eight weeks, and the result was a fine growth of new hair with beginning pigmentation at the end of three months.—*Cincinnati Lancet-Clinic.*

POTION USED IN DIABETIC THIRST.—DUCHENNE gives the following formula as of value in the treatment of the excessive thirst of diabetic patients:

| | |
|---|---|
| Potassium phosphate . . . | 2 parts. |
| Water . . . . . | 75 " |

A teaspoonful of this solution is given twice or thrice daily in a little wine or hop tea.—*Les Nouveaux Remèdes*, Oct. 1, 1886.

DISEASES OF THE SKIN IN THE SUBJECTS OF GOUT.—DR. CORLETT believes that the subjects of gout are predisposed to skin diseases which have peculiarities that "may be described as a hybrid between eczema and psoriasis." Those that he has observed were: First,

scaly; the scales were neither heaped up nor of silvery character as in psoriasis, and when detached they left an oozing surface. Second, their color was reddish, closely resembling a syphilide. Third, they showed a tendency to symmetrical distribution. Fourth, they were met with in adults usually over forty-five years old, except when the gout was inherited. Fifth, they were accompanied by other evidences of lithæmia. Sixth, they were prone to return. These eruptions were most benefited by treatment directed to the gouty diathesis. Locally most benefit was derived from alkaline baths, preparations of tar, and ammoniated mercury.—*Journal of Cutaneous and Venereal Diseases*, Sept. 1886.

LUBRICANT FOR SPECULUM.—BRONDEL commends as an antiseptic lubricant for instruments intended for insertion in the vagina a pomade thus constituted:

| | |
|---|---|
| Boracic acid, | |
| Essence of eucalyptus . . | āā 10 parts. |
| Vaseline . . . . . | 100 " |

For application to the hands he employs a more strongly antiseptic compound of vaseline and sublimate (1:1000) containing 10 per cent. of the essence of eucalyptus. The odor of the last-named constituent is found to mask that of the vaginal secretions which is occasionally so tenacious and penetrating. The mixture last mentioned is, however, inapplicable to metallic specula, as the surfaces become tarnished under its use.—*Gazette de Gynécologie*, October 15, 1886.

FISH AS AN INVALID DIET.—In the *Lancet*, August, 1886, p. 396, MR. NAIRNE gives a series of cases in which a fish diet gave rise to very serious mischief. Several cases are related in which convalescents from typhoid fever met with a fatal relapse after partaking of some boiled fish. For some time the author excluded fish from invalid diet, as he thought it the cause of all the mischief. Lately, however, he has found that if fish be steamed it is more tender, and can be eaten with impunity.

A CAUSE OF INDIGESTION IN INFANTS.—DR. CHAS. P. WOODRING, of Meadville, Pa., narrates a case of vomiting and diarrhœa in a bottle-fed infant, which had resisted all the ordinary remedies. Having given more than usual attention and care to the quality, dilution, etc., of the milk, he finally learned that the cow from which it was obtained was pastured in a wood lot. The milk was immediately discontinued, and that from the cow of a milk breeder substituted. The effect was magical; the child recovered its usual health forthwith. Another case, the symptoms being similar to the preceding one, presented itself. On investigation, it was found that the milk was supplied by a cow that was also pastured in a wood lot, but this pasture was two miles distant from the one referred to in the first case. The hint received in the treatment of the previous patient being acted upon, and the milk from a cow pastured in an open field substituted, the result was equally happy. A third patient, under exactly the same circumstances, and treated in exactly the same way, came under observation, followed by an identical successful treatment. The water in these wood pastures was exceptionally good, but the grass was scanty, and as these three cases all came under observation within a month, the conclusion one would naturally arrive at would be that the source of irritation in the milk must have been due to the leaves of trees. Had the milk substituted been in each case from the goods of the milkman, some might credit the *carb. calcis* and the high dilution with all the benefits derived from the change of milk.—*Cleveland Medical Gazette*, October, 1886.

IODIDE OF POTASSIUM IN MINERAL-WATER MENSTRUA.—Dr. v. Höaslin proposes, in a German medical journal, to correct the taste of iodide of potassium by dissolving it in carbonated water. He finds that by this means the nauseous taste of the iodide is almost entirely neutralized.

QUININE AS AN ANAPHRODISIAC.—DR. J. A. MCKINNON, of Selma, Ala., has found in his practice that the continuous use of sulphate of quinine will reduce the venereal desire, and that in old age it will destroy the animal propensity completely. He says that he has had cases under observation for several years who took from five to twenty grains daily, not for anti-malarial purposes, but because they had formed the quinine habit, and he has found on inquiry of such patients that the venereal desire in them was diminished, impaired, or destroyed. In most cases the subjects would become alarmed at their condition, and ask for relief. In the treatment of gonorrhœa in this malarious section, Dr. McKinnon often administers quinine in the inflammatory stage, for the dual purpose of counteracting any malarial complication and to control chordee. It must for this purpose be administered in not less than ten-grain doses at proper intervals, and it acts, he writes, in this respect more satisfactorily than camphor, lupuline, or the bromides.—*New York Medical Record*, October 30, 1886.

FLUID EXTRACT OF MARIGOLD IN EXTENSIVE BURNS.—DR. SEXTON presented the following points of practical interest at the nineteenth annual session of the Mississippi State Medical Association, the *Transactions* of which meeting have just been published.

Having had a series of severe cases of burns during the past year, I have thought my experience with the fluid extract of calendula officinalis might prove of interest to the profession.

My first case was a little child, severely scalded by pulling over a pot of boiling water. This burn might be classed of the second degree. I ordered a drachm of the fluid extract of calendula to an ounce of the ordinary carbolized oil, and had the most satisfactory results. The child stopped screaming as soon as the oil was applied, and made a rapid recovery in two weeks. The skin had peeled off from the elbows down to the hand.

The second case was one where the clothes had caught fire, and was more or less burned all over the back. In some places even the flesh was charred.

The same application was made, with equally gratifying results. The carbolized oil itself is a good dressing, but its healing properties are increased tenfold by the addition of a drachm of marigold to the ounce of oil. It has another advantage of rendering the oil much less offensive to the olfactories. The odor of

marigold is pleasant, and it makes an efficient dressing in cases of severe ulcerating sores and wounds. I found it of invaluable service in treating the extensive wounds and lacerations after the cyclone at Wesson and Beauregard, and deemed it of sufficient importance to call especially the attention of members of our Association to its virtues.

LEAD POISONING BY "FLAKE WHITE."—DR. D. W. HAND, of St. Paul, Minnesota, describes in the *Northwestern Lancet* of October 15, 1886, the following interesting case of lead poisoning by a cosmetic.

During the early summer a young woman called on me twice, and wanted something for a pain in her stomach, which she called neuralgia. Noticing her peculiarly pale and emaciated condition, I thought she must have a gastric ulcer, but could get no history of vomiting or any symptom except periodic pain. For this I prescribed an anodyne, and thought to investigate further, but lost sight of the case.

On August 14th, I was called in haste to see a young girl who was said to be in convulsions. On reaching the house, I found, in a badly lighted room, a girl writhing and rolling about the bed, but with no sign of convulsion. Her mother at once, with many lamentations, gave me this history: The girl was twenty-four years of age, and had been sick for over three years, being thin and weak and extremely pale. Her bowels alternated between constipation and diarrhœa, and very often she would have attacks of pain, like that which she was now suffering. The mother said they had employed many physicians, but nothing did any good. Their last physician had told them it was *spinal disease*.

I found the girl had both hands grasped tightly about the right thigh just above the knee, and she gave me to understand that was the seat of the worse pain. From her ell-like motion it was plain there was no disease of the spine; and when lights were brought, my attention was at once called to a peculiar *wrist-drop* on both sides. Examining then her mouth, I found the characteristic blue line on the gums, and at once told the mother it was a case of lead poisoning. She protested it could not be so, for they drank pure cistern water, were very careful, etc., and moreover an older daughter was affected much the same way. On calling that girl in, she proved to be the slim patient who had visited my office; and a new light was thrown on her case. She had no wrist-drop, but often some pains in her abdomen and legs, and examining her gums, I found the same blue line, even more distinct than in her sister's case.

Questioning this girl about the use of hair-dye, face powder, etc., she at once told me that for many years—in fact, ever since they were grown up—they had used "Flake White" on their faces as a beautifier. This "Flake White" is the commercial carbonate of lead, and I am told by druggists that they sell large amounts of it to women. It is used by mixing with rose-water, and then as a sort of cream spread thinly over the face. It gives an appearance like enamel to the complexion, and when persistently used must be very injurious.

After many days of intense suffering and mild delirium, the young girl was able to get up and crawl about the room. Both girls were then put on free doses of iodide of potassium; were told to eat all the watermelons they could, and to take a hot bath three times a week. Their improvement has been quite surprising, and yesterday, October 12, 1886, their mother told me they had not been so free from pain or seemed so well for nearly four years.

THE CONNECTION BETWEEN PULMONARY PHTHISIS AND OVARIAN DISEASE.—At the end of an extensive article thus entitled, DR. BEDFORD FENWICK speaks as follows:

I would, therefore, sum up my conclusions thus: 1. Ovarian cystoma is caused in many cases by an inherited tendency on the part of the patient to degenerative changes. 2. This inherited tendency is due to a family predisposition to pulmonary phthisis. 3. Gestation and severe falls or strains are probably powerful exciting causes of the disease.

The practical lessons to be learnt from the facts I have given are great and varied, and, with increased investigation, leading to further and wider knowledge, will certainly prove greater still. For example, we should already, perhaps, pronounce against a woman of marked phthisical tendency encountering the risks of married life. The intimation we now have gained of the other dangers to which she and any future daughters will be exposed, should strengthen us in more decided expression of opinion. We shall, I think, be able to show that sterility will not increase such a woman's tendency to be affected by ovarian disease, but that pregnancy may very probably do so. Then we can clearly understand how an ovary which is or may be subject to degenerative changes, is more likely than a healthy one to evolve an ovum having within it the seeds of the same disease. So the practical rule would be—first, when an ovarian cyst is discovered, to insist that future conception must be prevented, and to remove the growth as soon as possible; and secondly, while performing ovariotomy, to extirpate the other ovary too. For I contend most strongly on every ground, moral and physical, that it is wrong to allow a patient who has already shown the clearest evidence of degenerated ovarian structure the opportunity of perpetuating in children yet unborn the same disease and suffering. And we have Mr. Lawson Tait's high authority for believing "that it is in no way more risky to remove two ovaries for cystoma, or anything else, than to remove one." And, moreover, it is a well-known fact, that in cases of an ovarian cyst it is very rare for the other ovary to be perfectly healthy.

In conclusion, I venture to believe that I have shown the distinct probability that the great predisposing cause of ovarian disease is a family tendency to phthisis, and that gestation may be the exciting cause. But in view of the immense importance of the subject, both to the profession and the public alike, as regards questions of diagnosis and prognosis, and the still greater matter of prevention, I would earnestly appeal to all who in future have to treat cases of ovarian cystoma, either to publish as complete as possible a family and previous history of each, or to favor me with the notes, which, of course, I would duly acknowledge. A thousand well-recorded histories would definitely settle the important points I have touched upon by the hard logic of manifold facts. I should not base implicit confidence upon a smaller series. Straws show how the wind blows, but mathematical precision can alone determine its force.—*The Lancet*, October, 23, 1886.

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SATURDAY, NOVEMBER 13, 1886.


## GANGRENE OF THE LUNGS.

INTERESTING questions in regard to the nature and treatment of gangrene of the lungs have recently been brought again to the notice of the profession in this city by the report of a case of this disorder by DR. JOHN H. MUSSER, before the Philadelphia County Medical Society, on October 20th. In this case a large, gangrenous cavity existed in the right lung, and death occurred suddenly from profuse hemorrhage, due to giving way of a bloodvessel in the wall of the cavity. No surgical procedure was considered advisable during life, but, in the light shed by the autopsy, it was evident that it might have been undertaken without serious risk to the patient. Dr. Musser, in reporting the case, announced his conviction that pneumonia is a frequent cause of gangrene of the lung. This view is held by many excellent clinicians, and it is said to be a settled point by CARSON, the author of the article on this subject in Pepper's *System of Medicine*. Carson recognizes croupous pneumonia, catarrhal pneumonia, bronchiectasis, embolism, foreign bodies in the lungs, alcoholism, and the extension of diphtheria, as the commonest causes of gangrene; and vitiated states of the system as strongly predisposing to it.

The opinion that croupous pneumonia is a frequent cause of gangrene can hardly be considered so well established as Carson thinks. One of the most valuable contributions to the literature of this subject is by COUPLAND, in the *British Medical Journal*, of September 5, 1885. He analyzes 38 cases, collected from the *post-mortem* records of the Middlesex Hospital, from 1875 to 1885. Of these, 14 were "associated" with acute croupous pneumonia, but Coupland says that only 8 of them could be fairly considered to be dependent on the latter, 6 were associated with chronic pneumonia, 7 with cancer of the tongue or œsophagus, 2 with cancer of the lung, 2 with bronchiectasis, 4 with embolism or thrombosis in the lung, 1 with suppurating glands and tuberculosis, 1 with thoracic aneurism, and 1 with empyema and cerebral hemiplegia. It will be seen that pneumonia was the most frequent single cause of gangrene in these cases; but the termination of acute pneumonia in gangrene can only be asserted, as Coupland says, "in a fair proportion" of the cases. When the whole number of cases of pneumonia is considered, this termination is seen to be happily very rare. Out of 1065 cases reported for 1884 to the Collective Investigation Committee of the British Medical Association, gangrene occurred in only two, both being old subjects, and one a drunkard.

A careful study of the records cited by Coupland might lead to a somewhat different classification of the cases, and especially, we think, if a fuller statement were made of the general condition of the patients, including the proportion of cases in which phthisis, syphilis, diabetes, chronic alcoholism, etc., were present. The most frequent cause of gangrene of the lung may probably be said to be septic infection by matter brought either by way of the air passages, as in case of cancer of the throat, or the aspiration of foreign bodies, or by the bloodvessels, or through the lymph channels, as in empyema, or more directly by the breaking down and putrefaction of inflamed bronchial glands, or by the putrefaction of retained secretions, as in bronchiectasis.

The treatment of gangrene of the lungs is either medicinal, or surgical, or both. In the former, general supporting measures are of the utmost importance, and should be combined with antiseptic inhalations, for which purpose carbolic acid is probably the most useful drug. Thus PAUL, in the *Gazette Médicale de Paris*, No. 35, 1885, reports 7 cases of gangrene of the lungs—in regard to some of which the diagnosis is questionable—treated by inhalations of carbolized air, and all cured. DUNLOP, in the *Lancet*, of November 14, 1885, reports two cases of abscess of the lung—one of which is called a case of gangrene—similarly treated, with one recovery. BONAMY, in the *Bulletin Général de Thérapeutique*, of May 15, 1885, reports good results in one case of gangrene of the lung treated with oil of eucalyptus.

One of the most important questions in regard to the treatment of gangrene of the lungs concerns the propriety of, and the indications for, surgical interference. The history of this part of our subject is recent and somewhat obscure, as the records of cases in which the lung has been operated upon for the relief of conditions of fetid tissue destruc-

tion do not always indicate clearly whether or not true gangrene was present. If we understand by gangrene, death in mass—however small—as contrasted with molecular or cellular death, there can be no doubt that many recorded cases of fetid or putrid abscesses, and even of cavities in phthisis, should be classed as gangrene. For this reason the discussion of surgical interference in gangrene of the lungs may be regarded as only a part of the discussion of such interference in putrid cavities of any sort in the lungs. Mosler is credited with first proposing incision and drainage for these conditions nearly twenty years ago, but it was first employed, we believe, by Dr. Cayley, of London, in 1879, although Radek had opened and washed out an abscess of the lung in 1879.

We have studied the records of nine cases of this operation, four for abscess of the lung, and five for gangrene. These show that recovery took place in three cases, that distinct relief was afforded four times, although the patients' lives were not saved, and that only twice did death speedily follow the operation. The results obtained in these cases, as reported by Coupland, in the paper referred to above, and by FENGER and HOLLISTER, in an admirable paper, in the *American Journal of the Medical Sciences* for October, 1881, warrant, we believe, the conclusion that whenever the diagnosis of a putrid or gangrenous cavity in the lung is reasonably established, and the patient is losing ground under strictly medicinal treatment, surgical intervention is justifiable. This intervention should consist in an exploratory puncture, followed by incision, and even, if necessary, resection of part of a rib, drainage, and washing out with some antiseptic fluid. Potassium permanganate and carbolic acid solutions have been most frequently used, but we would suggest weak solutions of permanganate of potassium for the first washing, or for several of them, and afterward solutions of boric acid, as the most innocent antiseptic known. We believe that such measures might also prove of value, in well-selected cases, in the treatment of large cavities in phthisis.

Finally, we would suggest that these views might be put in practice earlier than some writers recommend, with advantage to the patients and with improvement in the results of the operation.

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### SUBPERITONEAL LAPAROTOMY.

THIS is the name given by POZZI to an operation which, he claims, is particularly well adapted to insure the thorough evacuation and drainage of those parametritic collections of blood and pus in the pelvis which constitute, perhaps, the most difficult cases with which gynecologists have to deal.

While admitting that excellent results have been obtained in these cases by the ordinary abdominal incision, especially when performed by such men as Tait, Baumgaertner, Martin, Imlach, and Prengrueber, Pozzi asserts that his method is preferable for the two important reasons, that it avoids the danger of septic peritonitis, and secures a more perfect drainage. The incision is made as if for the ligation of the external iliac, and is about four inches in length; the tissues are cut through, layer by layer, until the peritoneum is reached; this is pushed upward by the finger, the encysted collection of fluid is sought for, and, when found, freely incised; a trocar is then passed into the cyst, and through its lower wall into the vagina at the posterior vault; into the opening thus made a drainage tube of large calibre is passed, so that one end projects from the vagina, and the other from the abdominal wound, and the cavity is washed out daily.

For a certain class of cases, in which the collection of fluid is of considerable size and encapsulated, this operation would seem to be very suitable; but for small collections of pus, especially in the tubes, and for those suppurating sinuses often found in cases of long standing, it would probably not give as good results as the ordinary intraperitoneal laparotomy.

Pozzi reports in a recent number of the *Gazette Médicale de Paris*, five cases operated on by the subperitoneal method, all of which recovered perfectly from the operation, although one was not benefited by it. It cannot be said that this method of operating is entirely novel, for it was fully described by Hegar, in 1881; but it seems to have been original with Pozzi, who first saw Hegar's description after having performed several operations.

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### RAPID TRANSIT AND THE WAGE-EARNING CLASSES.

There are many reasons why a large city should be provided with the means of rapid transit, either by elevated or underground railroads. Not the least important of these is the benefits which it will afford to the wage-earning classes, especially such advantages as arise from the comfortable and healthy housing of this portion of the population. Under existing conditions the working classes are generally domiciled near their places of employment. The loss of time, the fatigue, and the risk of disease consequent on exposure to wet and cold in travelling long distances prevent the laborer from selecting a home far from his work. The alternative is the choice of lodgings in the neighborhood of the place of employment. The great demand for a special class of property in a restricted district results in the enhancement in value of real estate, the immediate effect of which is to promote overcrowding with its attendant evils.

In order to change the order of things and overcome the evil of overcrowding and the consequent offences against health and morality, the advantages

of cheap and comfortable houses in the suburbs, where land is less valuable, must be placed within the reach of the working classes, and the bar to their enjoyment set aside by providing cheap and rapid communication with these outlying districts. This suggestion is well worth consideration by philanthropic individuals and societies engaged in providing improved house accommodation for the wage-earning classes, as it promises to help them solve a problem which they have never successfully mastered. The tenement house system, even under the influence of sanitary reform, is disastrous to health and good morals. The proper substitute is the comfortable suburban home for the workman and his family, where the conditions of health, decency, and morality are likely to obtain—a plan which is made feasible by reducing time and space by means of rapid transit.

## POISONING BY HAIR-DYE.

EVERY now and then the public is startled by the discovery of some new method of insidious poisoning. We learn, perhaps, that there are undreamt-of poisons in stale milk, or in the glazing of stew-pans, or in the solder of fruit-cans. Not only have many in ignorance brewed poison in the pot, and made the air of their houses unwholesome with arsenical wall-paper, but they have also fairly rubbed poison into their flesh by means of the cosmetic that promises the "bloom of youth."

The recent admirable report of the Massachusetts State Board of Health contains analyses of most of the "hair restorers" to be found in the market, among others including such well-advertised preparations as Ayer's, Allen's, Barrett's, Hall's, Chevalier's, and the "Revivum." Of these, all contained lead, Parker's and Chevalier's showing most, and Barrett's "Vegetable" hair restorative least, though the latter had the equivalent of about 0.22 per cent. of lead acetate.

As among skin cosmetics, no innocent substance has the body, the smoothness, and adhesiveness that have caused fine white lead to be preferred by those who offer to hide the homeliness of complexion, so for the hair no dressing has been found to cause the desired gradual darkening without the aid of lead. Either it is mixed with sulphur in the bottle, or trusted to find enough in the hair to form there a deposit of the black sulphide of lead.

The change of gray hair to something nearer the color of youth takes place so slowly that the user is easily duped by the assurance on the label of the bottle that the fluid is not a dye, but a tonic and restorative of hair vigor. If this were merely a case of deception, it would scarcely merit the attention we have given it. But the deceiver is also a thief and a poisoner, stealing away the health that is the basis of natural beauty, and daily increasing the need for artifice to make up an appearance like the thing stolen.

From recent periodicals and works on toxicology a list of some length could be made of cases of all degrees of slow poisoning from lead hair-dyes. The lead itself has even been recovered from the body after death in two cases of which we know. Doubtless, if all the persons who have experienced harm from lead hair-dyes could be counted, the number would be sensational enough to meet the wants of the most zealous sanitarian. The effects are often so vague that the cause is not suspected. Most physicians would not assign to a cosmetic, of the use of which they are presumably ignorant, the causation of such vague symptoms as dry and sallow skin, falling hair, dyspepsia, debility, low spirits, neuralgias, and other usual phenomena of confirmed ill-health. Yet these accompany, and may exist apart from, the sharp attack of colic, or wrist-drop, or joint pains, or brain trouble, that would first direct the physician's suspicion to lead poisoning.

General discussion a few years ago did much toward reducing the harm done by skin cosmetics, when enlightened public opinion forced the proprietors to furnish a chemist's voucher of freedom from poison. It is to be hoped that the press, lay and medical, will take notice of these recent analyses, and agitate the subject anew before the public.

In this connection two important facts are now well established: First, that serious disease may be induced by the long-continued use of lead "hair restorers." Second, that the most popular, if not all, the "hair restorers," *vegetable* and other, contain lead.

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THE NEW YORK STATE MEDICAL ASSOCIATION will hold its third annual meeting at Lyric Hall, Sixth Avenue, between Forty-first and Forty-second Streets, New York City, on Tuesday, Wednesday, and Thursday next. The most notable feature of the programme is a discussion on the treatment of gunshot wounds of the belly, which will be participated in by Drs. Charles T. Parkes, of Chicago, C. B. Nancrede, of Philadelphia, Surgeon-General Hamilton, of the Marine Hospital Service, J. D. Bryant, W. T. Bull, and F. S. Dennis, of New York, T. R. Varick, of Jersey City, W. S. Tremain, of Buffalo, and E. M. Moore, Jr., of Rochester.

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AT the stated meeting of the New York County Medical Association, to be held on Monday evening, at the Carnegie Laboratory Dr. T. Gaillard Thomas will read a paper on "Laparotomy as a Diagnostic Resource," and Dr. Ira B. Read will make some remarks on "Rupture of the Aneurismal Sac of the Aorta," and will illustrate them by a specimen.

ON last Monday Harvard University concluded its celebration of the Two Hundred and Fiftieth Anniversary of its foundation. The occasion was honored by the presence of the President and his Cabinet, the Governor of the State, with numerous other high public functionaries, and many delegates from institutions of learning at home and abroad. Mr. James Russell Lowell delivered the oration, and Dr. Oliver Wendell Holmes read a poem. At its conclusion President Eliot conferred the degree of Doctor of Laws upon thirty-five persons who had been selected for this distinguished honor. The list included three eminent representatives of medicine, and their selection by the Harvard authorities will meet the cordial approval of the profession. They were presented to President Eliot for the conferring of the degree, in the following language:

"Joseph Leidy, anatomist, biologist, a leader and exemplar among American naturalists, professor of anatomy in the University of Pennsylvania.

"Silas Weir Mitchell, physician, physiologist, author.

"John Shaw Billings, surgeon in the United States Army, student and teacher of public medicine, medical bibliographer."

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WE learn that the West Virginia State Board of Health has determined hereafter to register the graduates of the Columbus (Ohio) Medical College on their diplomas, thereby revoking their former action. We are further informed that the graduates of this College are entitled to be thus registered in all States in which this procedure is required.

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DR. W. H. DRAPER will deliver the Anniversary Discourse before the New York Academy of Medicine next Thursday.

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DR. F. J. SHEPHERD, of Montreal, on Saturday week, removed by a lumbar incision a large calculus weighing nearly five ounces from the left kidney of a man aged twenty-six. No tumor was discoverable before the operation. At last accounts the patient was doing well. We hope to present a full report of the case at an early date.

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THE death of DR. JULIUS F. MINER is announced at the age of sixty-three years. He was eminent in his profession, and ranked for many years as one of the ablest surgeons in Western New York. He was born in Peru, Mass., in 1823, was graduated at the Albany Medical School in 1847, and settled in Buffalo in 1855. He was for several years Professor of Special and Clinical Surgery in the Buffalo Medical College, and editor of the *Buffalo Medical and Surgical Journal.*

## REVIEWS.

PRACTICAL HUMAN ANATOMY. By FANEUIL D. WEISSE, M.D. 8vo. pp. xii. 456, pl. 222. New York: Wm. Wood & Co., 1886.

The first thing that strikes one upon opening this volume is the large number and the excellent quality of the plates. They form half the work. They are partly lettered on each organ or tissue, a method first popularized in *Gray's Anatomy*, and partly by clear reference lines. The lettering is unusually well done, and it would be hard to excel in the delineation of superficial fascia in several of the plates, but especially in plate 6. There is hardly an error in the whole number, unless we cite one of omission—that no plate shows the hymen—an omission in which nature, however, has sometimes set us the example, and which the index follows.

The author's use of "section" as a verb is peculiar and indefensible, and his adoption of odd names such as "pollex eminence" and "minim eminence," for "thenar" and "hypothenar," has not only no advantage in clearness, but is positively confusing. We fear that some not over-bright students might think that "minim" had some pharmaceutical foundation. So too in describing the levator ani et prostatæ, he speaks of "the prostatæ portion," and "the ani portion."

The book, however, is good—thoroughly good—and we commend it most highly.

## SOCIETY PROCEEDINGS.

### PHILADELPHIA NEUROLOGICAL SOCIETY.

*Stated Meeting, October 25, 1886.*

THE VICE-PRESIDENT, CHARLES K. MILLS, M.D., IN THE CHAIR.

DR. MORRIS J. LEWIS read a paper on

A PARTIAL STUDY OF THE SEASONAL RELATIONS OF CHOREA AND RHEUMATISM.

(See page 541.)

DR. WHARTON SINKLER said that this paper was valuable and interesting because it showed the close relation between chorea and rheumatism which has been denied by some authors. For instance, Sturgis had 219 cases of chorea in the Hospital for Sick Children in London, of which number twenty per cent. also had rheumatism; but he did not attach much importance to this connection, because, as he stated, fifteen per cent. of all children have rheumatism. Other writers have expressed the same views. This paper seemed to prove the relationship between the storm centres and attacks of rheumatism and chorea.

DR. G. E. DE SCHWEINITZ reported

EIGHT CASES OF TOBACCO AMBLYOPIA, ONE COMPLICATED WITH DISEASE OF THE SPINAL CORD.

Since 1854, when Mackenzie showed that defective vision might be produced by tobacco smoking, and since, ten years later, when the subject was renewed and enlarged by the observations of Hutchinson, tobacco amblyopia has become one of the well-recognized facts of ophthalmological science. As is well known, pro-

gressive and usually equal failure of vision, unimproved by optical therapeutics; a feeling of wretchedness on the part of the patient; an ill-defined ophthalmoscopic picture; and a symmetrical, oval scotoma in the fields of vision, lying between the fixing point and the blind spot, and often including both, in which the perception of green and red is especially defective, constitute the marked symptoms of this affection.

*Case I.*—A. G., æt. forty-nine, a book-keeper, presented himself in the University Hospital, because his vision was failing and because of sleepless nights. He was a large, dark-haired man, with a restless, irritable disposition. Vision in the R. E. $\frac{20}{C}$, L. E. $\frac{20}{CL}$. Pupils about normal in size and reaction. Vision best in the early morning. Both optic nerves slightly hazy and gray in their deeper layers. The refraction H., but vision unimproved by the correcting glass. The fields of vision for white and red about normal. Between fixation—*i. e.*, the macula and the blind point, the optic nerve entrance—there was an oval, slightly sloping, relative scotoma, including both. In this area green appeared dirty white, and red could not be distinguished as such. For twenty years he had smoked excessively, averaging two pounds of Cavendish a month. He drank one pint of spirits a day. He was ordered to stop tobacco absolutely and to diminish his daily quantity of spirits. In a month his vision had improved to $\frac{20}{XXX}$ in each eye, and with his correcting glass he could read with fair ability.

*Case II.*—B. E., æt. fifty-three, laborer, came to the University Hospital for failing vision. He was a small, dark-skinned man, with fairly steady nerves. Vision, R. E. $\frac{20}{LXXX}$, L. E. $\frac{20}{L}$. Pupils normal in size and reaction. Vision worse in a bright light. Both optic nerves were gray-red, and the veins full and dark. The fields of vision showed no marked peripheral change, but perfectly characteristic oval scotomata were present. This man had smoked two pounds of "hard tobacco" a month for many years, and was accustomed to drink one quart of spirits a week. The usual order to stop tobacco was given. Sufficient time has not yet elapsed to prophesy how successful the case will be.

*Case III.*—J. M., æt. thirty-five, a mechanic, came to the University Hospital because of defective vision, headache, and great nervousness. He was a short, thick-set man, tremulous and despondent. Pupils exhibited no abnormalities. Vision, R. E. $\frac{20}{LXXX}$, L. E. $\frac{20}{C}$. The nasal edges of the optic nerves were hazy and the temporal sides gray; arteries rather small. The fields for white and red were not far from normal, those for red being slightly contracted. In the right eye from fixation and including it and passing outward there was an oval scotoma for red and green which reached to the blind spot, but did not embrace it. In the left eye a similar, rather more irregular scotoma. Up and out from the fixing point a small area of the scotoma was absolute. This man for fifteen years had smoked about six ounces of coarse tobacco a week, and occasionally cigars and cigarettes. He denied taking anything to drink, except a little beer or ale. In eight days his vision in right eye had become $\frac{20}{XXX}$, and in the left eye $\frac{20}{L}$. He then passed from observation.

*Case IV.*—Ida J., æt. twenty-seven, came to the University Hospital because of failing vision and great "nervousness." She was a finely formed brunette, of rather pallid countenance and excitable temperament. Vision in R. E. all of $\frac{20}{XL}$ some of $\frac{20}{XXX}$. The L. E. had been removed years ago for disease. Pupil responded freely to the change of light and shade and was about medium size. The optic nerve was pallid, edges clear, arteries rather small. The field of vision both for white and red was somewhat contracted and surrounding fixation in a band-like manner, but not extending to either side, there was a relative scotoma in which this color appeared "brownish" or rather "dull colored." The girl used no tobacco, but had worked for some years in a tobacco factory. On this account she was advised to get other employment and also to take one twenty-fourth of a grain of sulphate of strychnia three times a day. In two weeks the scotoma was no longer demonstrable and in about one month the vision had returned to normal and is now above normal.

*Case V.*—H. H., æt. fifty-eight, a shoemaker, came to the Dispensary of the University Hospital because his eyesight was so poor he could no longer see to do his work. He was a medium-sized man, with dark hair beginning to turn gray, tremulous and easily startled. Vision in the R. E. $\frac{20}{CC}$, the same in the L. E. The pupils were small and failed to respond to the changes of light and shade, although they contracted in the efforts of accommodation. The optic nerves showed a large, shallow excavation, widening of the scleral ring all around and were of a distinctly gray color. There were no changes in the central circulation. The fields of vision showed slight contraction for white, distinct limitation for colors and oval scotomata from fixation to blind spot, including both. The man smoked three ounces of tobacco weekly and drank whiskey, but not to excess. Further examination developed the fact that the patellar reflexes were absent, that with closed eyes the upright position was maintained with difficulty, and on attempting to walk the gait became staggering, if not positively ataxic, and that preceding the time of failing vision there was a history of diplopia. These symptoms, together with the state of the pupils rendered the presence of sclerosis in the posterior columns of the cord a fair inference. There was no history of syphilis. Examination of the urine revealed it normal. The patient was ordered to stop the use of tobacco and take iodide of potassium. Although two months have elapsed since he applied for treatment no improvement in his vision has taken place, nor have the scotomata changed or lessened.

*Case VI.*—W. H., æt. fifty-eight, a farmer, applied for treatment in the University Hospital, because of a "cloud" before his vision and inability to do even ordinary coarse eye-work. He was a well-preserved, large-framed man, with iron-gray hair and presented no noteworthy unsteadiness of the nervous system. Vision in the R. E. counts fingers at two feet, in the L.

E. $\frac{10}{CC.}$ The pupils were small, they responded to the changes of light and shade and also to the efforts of accommodation. Both optic nerves were small, surrounded by a halo, and their edges and the surrounding retina hazy. The disks were gray-red in color. In the neighborhood of each macula were slight patches of choroiditis. In the R. E. the field of vision for white was contracted, but not markedly so, and the fields for blue and red showed similar slight limitations. Between fixation and the blind spot, a large irregular scotoma for all colors. In the area surrounding the fixation, and for a small distance toward the blind spot, the loss of color was absolute, from there to blind spot relative. In the L. E. the field for white was limited above, and the fields for red and blue irregular and constricted. A similar scotoma, absolute near its centre, extended between fixation and blind spot and included both. This man smoked four to six cigars daily and drank "an occasional glass of whiskey." The patellar reflexes were prompt and greater on the right than the left side. His urine has as yet not been examined.

*Cases VII. and VIII.*—These cases occurred in private practice, and were both men over forty years of age, of active business habits, who complained of indistinct vision. In both the vision was not far from normal, viz., $\frac{15}{XX}$, and in both the eye-grounds presented no abnormal features. There were no true scotomata, only slight dimness of the perception of green and red between the macula and the optic nerve. These men were inveterate smokers. The difficulty of vision disappeared in one patient when he ceased using tobacco, the other declined to abandon his habit. While tobacco was evidently producing deleterious effects, these cases can scarcely be classified as true instances of tobacco amblyopia.

In three of the cases reported, the ophthalmoscopic examination revealed "hazy disks" either with or without full, dark retinal veins (Cases I., II., and III.); in two, if the last record be included in the list, there were no fundus changes (Cases VII. and VIII.). In one the optic nerve was pallid, the arteries rather small, perhaps the appearance of beginning atrophy (Case IV.), and in one the nerve showed evidences of gray atrophy (Case V.), while in another the appearances were those of a subsiding neuritis (Case VI.). Three of these cases are perfectly typical instances of tobacco amblyopia (Cases I., II., and III.); and two of them, if not characteristic cases, at least show the result of tobacco impression (Cases VII. and VIII.). Case IV. is an atypical one, inasmuch as the scotoma surrounded the fixation but did not include it or pass to either side, and, furthermore, is noteworthy because of the fact that the tobacco found its entrance into the system by absorption through the skin. This woman worked in tobacco, but did not use it. Case V. may be one of those rare instances in which a central scotoma appears with a spinal atrophy of the optic nerve, but inasmuch as the man used tobacco, although moderately, its influence cannot be excluded. An almost precisely similar case is recorded by Gowers (*Med. Ophthalmoscopy*, p. 111). In Case VI. it is doubtful if the use of tobacco produced the scotoma, although, as in the last instance, the patient was accustomed to its use, and hence its influence cannot be excluded. The whole subject of tobacco amblyopia has so often and so thoroughly been discussed, notably by Mr. Nettleship (*St. Thomas's Hospital Reports*, 1878), that it is useless to do more than report these cases and point out the features that are interesting.

DR. B. ALEX. RANDALL remarked that some ophthalmologists disbelieve in the existence of tobacco amblyopia. Very few cases have been put on record in which the influence of alcohol could be wholly excluded; but the combination of alcohol and tobacco is certainly a serious disturbing element in a number of cases. This affection is constantly coming under notice—occurring some eight or ten times in a thousand cases. While the scotoma is usually of an oval form, he had seen it distinctly annular (as in Case IV.) in a case typical in other respects.

It has recently been claimed that the absolute quantity of nicotine used does not bear that relation to amblyopia that we should infer, and that those who smoke the finest cigars are more liable to this affection than those who smoke the poorest and strongest.

DR. JAS. HENDRIE LLOYD asked if this affection were due to neuritis or to some disturbance of the intraocular circulation? The cases reported suggested an interesting analogy between tobacco amblyopia and peripheral neuritis, especially that form due to toxic agents. Is this a form of toxic neuritis of a special nerve?

DR. J. MADISON TAYLOR, referring to one of the cases reported, asked if it were not possible to have a powerful effect from the absorption of tobacco by the skin and lungs? In children working or living in tobacco shops, he had, in several instances, seen profound disturbance of the heart as the result of absorption.

DR. LOUIS J. LAUTENBACH remarked that there had always been an element of doubt about these cases, and that of late this had become stronger. There are cases reported in which alcohol has been stopped, while the tobacco has been continued, and the patients have gotten well. Dr. Minor, of Memphis, reports eight such cases. In addition to the discontinuance of alcohol, he administered in these cases either iodide of potassium or strychnia. Nettleship, Foerster, and a few others, have succeeded in curing some of these amblyopia cases by the discontinuance of tobacco alone. About two years ago, at the Philadelphia Eye and Ear Dispensary, he had experimented in this matter, and had cured a number of cases by removing alcohol, allowing them to use tobacco, without the use of any medicines. The same treatment had resulted satisfactorily in two cases treated in private practice. One case was that of a professional base-ball player, who was in the habit of drinking thirty-five or more glasses of whiskey, and smoking from eighteen to twenty-five cigars a day. When examined, both eyes gave V.= $\frac{3}{LX}$?. The patient was directed to stop the use of strong liquors, but to keep on with his tobacco. In four days later V.= $\frac{3}{XXXV}$. Vision continued to improve, although no medicines were used.

The condition which causes this amblyopia may be a slight grade of retro-ocular neuritis, involving only the macula lutea fibres, which may be induced not only by tobacco but also by alcohol; lead occasioning it in some few cases. Depressed conditions of the system may probably cause it. This amblyopia with central scotoma,

is coming to be looked upon not as a special symptom of tobacco abuse, but rather as an indication of the depression of the general system which may be brought about by various poisons.

DR. WHARTON SINKLER referred to a paper published in one of the New York journals by Drs. Roosa and Ely, giving the results of the examination of a large number of workers in cigar factories, many of those examined smoking a great deal. Only a very small proportion of these cases was found to present any defect of vision or any disorder of the nerve. He asked if in the experience of other members they had found that a large proportion of nervous diseases were attributed to tobacco? He saw but few patients at his clinic at the Infirmary for Nervous Diseases with nervous disorders which could be directly attributed to the use of tobacco.

A point to be remembered in the consideration of this subject is that a person who takes alcohol will use more tobacco than one who does not. If he stops his alcohol he will take less tobacco.

DR. MORRIS J. LEWIS stated that in studying the subject of writer's cramp, he had found that in the majority of cases the use of tobacco increased the difficulty. A few out of forty-three cases said that it did no harm, and three said that it was of service.

DR. FRANCIS X. DERCUM asked if those who used tea or coffee to excess, especially tea-tasters, presented symptoms analogous to those presumably caused by tobacco and alcohol?

DR. B. ALEX. RANDALL said that there were some cases in which alcohol *could* be entirely excluded in the causation of this affection. As to the pathology of the trouble, it is interesting to note that he knew of no case on record of true neuritis in the sense of anything like a choked disk, which had any apparent relation to tobacco abuse; although such cases are not rare in lead poisoning and other toxæmic conditions. In all cases of actual neuritis of the optic nerve, as in inflammation of other nerves, strychnia has to be carefully avoided in the acute stage. In most cases reported the use of strychnia had no injurious effect, and in fact caused, or was followed by, improvement. In some cases where strychnia has been given and the alcohol and tobacco both continued, recovery has taken place. The amount of poison required to produce a certain effect probably depends upon the constitution and condition of the patient. If the general condition is brought up a given amount of the poison no longer has the same effect.

DR. CHARLES K. MILLS, referring to the question of Dr. Sinkler, stated that his experience agreed with that of Dr. Sinkler, that nervous disorders are rarely attributable to the use of tobacco, although some cases of tremor and general nervousness, and a few other affections, undoubtedly originate in this way.

DR. GEORGE E. DE SCHWEINITZ, in closing the discussion, said that he believed that in these cases there was an axial neuritis. He has had no experience with the poisonous effects of tea and coffee. Some of the cases reported had recovered, although the free use of spirits was continued. One of the patients continues to drink a pint of whiskey a day, and yet his vision has remained normal since the discontinuance of tobacco. The only way to reach a satisfactory explanation of this subject is to continue the experiments.

One object in presenting this series of cases was to call attention to the importance of a careful study of the field in nervous cases. If this were done more frequently, many interesting discoveries would probably be made.

Referring to the question of Dr. Taylor, he said that tobacco is freely absorbed through the skin, but inasmuch as it is rare to find scotomata under such circumtances he had reported the case.

DR. FRANCIS DERCUM reported

### A CASE OF UNUSUAL PARESIS OF THE FOREARMS.

(See page 543.)

DR. CHARLES K. MILLS referred to three cases which had been reported a few years ago, by Dr. Kerlin and himself. These cases were studied at the School for Feeble-minded Children at Elwyn. The patients were brothers, and in them was a marked combination of pseudo-hypertrophy and muscular atrophy. One of the boys who has since died, presented in the calves the typical appearance of pseudo-hypertrophy and also in one or two other isolated portions of the body. In the back, however, were all the distinctive signs of progressive muscular atrophy. In the second case the changes were principally those of progressive muscular atrophy. In the third there was a combination of the two conditions. Why in one case we get the pseudo-hypertrophic form, and in another the atrophic form, he was not prepared to say. He believed that in all cases there are cord and nerve lesions, but he did not know which of these was primary. In the treatment of such cases, that pursued in the present instance would seem to offer the most hope. He was in the habit of putting these cases on strychnia, iron, cod-liver oil, and similar tonic and nutrient remedies. He had never seen much benefit from local treatment, but if myositis was present he thought it worthy of a trial.

DR. JAMES HENDRIE LLOYD said, with reference to the age at which this affection may develop, that he had recently seen a case in which a married woman, thirty years of age, who had been under treatment on several occasions without a positive diagnosis having been made, returned after an interval of four months with hypertrophy of the muscles of the calf, lordosis, and other characteristics of pseudo-muscular hypertrophy. This was the first case which he had seen in which the disease had apparently occurred as a primary disease in an adult with no hereditary tendency.

DR. WILLIAM OSLER remarked that some observations had been made by an English physician with reference to the atrophy which follows great use of the muscles. After examining the microscopic specimens, he agreed with Dr. Dercum in regard to the condition present in this case. There is no essential difference between the atrophic and the pseudo-hypertrophic form of the disease, and both may be present in the same case.

DR. WILLIAM OSLER exhibited the following specimens:

### PACHYMENINGITIS.

J. K., was admitted to the drunkards' ward of the Philadelphia Hospital, on August 26th, with delirium tremens, and died September 4th. I did not see him

during life, but from the account given by the Resident Physician, he appears to have had an ordinary attack of delirium tremens without any paralysis, local or general. He was not in a condition to give a satisfactory account of himself. Death took place from exhaustion. The post-mortem showed an extensive pachymeningitis of the right half of the dura mater. The specimen presents layers of exudation two lines in thickness over the central portion of the dura, gradually becoming thinner toward the tentorium or the orbital surface. In these regions there was a delicate uniform sheeting on the dura mater and no hemorrhage had as yet taken place; but on examination with a low power lens there could readily be seen a plexus of wide vessels. In the central part there were several layers of altered blood, alternating with colorless firmer exudation. The surface of the pia mater of this hemisphere was a little stained, but there had evidently not been any pressure upon the convolutions. There were no other lesions.

PHTHISIS; TUBERCULAR MENINGITIS; APHASIA.

J. McD., æt thirty-six, laborer, was admitted to the Philadelphia Hospital, June 5th, with phthisis. There was nothing special in his family history; five of his brothers and sisters had died from causes unknown to him. He had been ill for over eighteen months with cough, fever, chills, and sweats. Had brought up blood and had had severe diarrhœa. When I saw him first, on September 4th, there were signs of extensive disease in both lungs. Ten days before, he had two convulsions, after which he had some difficulty in talking. On the 4th he looked bright and intelligent, the pupils were dilated and there was no paralysis. Expressed himself with difficulty; when asked his name, said *Joseph Mac*, but could not say the *Donald*. After several attempts and a good deal of worry, he did so, and seemed much pleased. Some words he said clearly, others he could not. Thus he could read the letters of the word *shaken*, but could not pronounce it. He was delirious at times during the next two weeks, and one night he got from the ward on the fire-escape. The aphasic condition improved somewhat. The eye-grounds were examined twice, with negative results. At the time of my visit on September 10th, he had an epileptic seizure, strong spasm of respiratory muscles, and great lividity. Tonic spasms of arms gradually relaxing and becoming choreic. Facial muscles in violent action; face drawn to the left, eyes to the right (strongly) and upward. He became unconscious the next day and died on the 14th. The autopsy showed extensive disease of the lungs. The brain was large; at the base the membrane was thickened and infiltrated and tubercles existed along the vessels. On exposing the Sylvian fissures, the pia on the left side covering the insula was very thick and studded with tubercles the size of a pin's head. The process was most advanced upon the three or four posterior gyri of the insula. The gray matter was reddened and soft. The third left frontal convolution was not specially involved; there were a few isolated tubercles on the pia, but the membrane was not thickened. In the right Sylvian fissure there were tubercles scattered along the vessels, and the arteries of the anterior perforated spaces presented many bead-like and oval swellings. The ventricles were dilated and their walls softened.

EMBOLISM OF RIGHT MIDDLE CEREBRAL ARTERY; CHRONIC NEPHRITIS.

J. W., laborer, aged forty-nine, was admitted to the Philadelphia Hospital, Oct. 7, 1886. No special history could be obtained, as he was very dull and heavy. When I saw him on the 9th he was apathetic, answered questions with difficulty. The face was anæmic, and he had a decidedly renal look. The pulse was slow and hard, sixty to the minute. No increased heart dulness, possibly a murmur at apex, but it was not at all distinct, and at base very ringing. Albumen and hyaline casts were present in the urine. The case was regarded as one of chronic interstitial nephritis.

On the morning of the 12th he had a hemiplegic attack. I found him at 1 o'clock P.M., comatose, with puffing respiration and complete left hemiplegia, including face. Right pupil larger than the left. He died during the night.

The autopsy showed cirrhotic kidneys, slight atheroma in large vessels, moderate hypertrophy of left ventricle. The mitral valve presented recent vegetations, three in number, on the auricular face of segments, freely movable, and on the posterior flap a flattened area looking as if eroded. The right hemisphere of the brain looked fuller than the left, and the vessels were not so full, particularly in the central region. The vessels of the circle of Willis were denuded *in situ*, and the right middle cerebral just beyond the first two branches (temporal) was found plugged with the firm embolism here shown. It was very evident before opening the vessel, as it showed grayish-white throughout the coat, while on either side of it were dark clots, and the branches beyond it were very small. The embolus was firmly adherent, and had a small pale clot on its proximal, and a firm dark one on its distal side. Examination showed it to be an endocardial vegetation, and it doubtless came from the rough spot on the posterior segment. The convolutions of the central portions of the hemisphere were swollen, and œdematous, particularly the gray matter, and softer. There was a light gray yellow tint, but there had not been time for much change. The right anterior cerebral was greatly enlarged, three times as big as the left, doubtless a compensatory process.

DR. CHARLES K. MILLS remarked that cases of pachymeningitis hemorrhagica were somewhat common in the Philadelphia Hospital. He had met with a comparatively large number of cases in making autopsies in that institution. A form of hemiplegia met with in the wards of this hospital, is undoubtedly due to pachymeningitis hemorrhagica. These cases make partial recoveries, and then again break down; and at the autopsy is found the condition exhibited to-night. He had reported one case five years ago, with a number of other cases, in the English journal *Brain*. This condition is sometimes mistaken for embolism, hemorrhage, or some other form of disease producing hemiplegia. In some of the cases he had seen there had been distinct naked-eye flattening of the convolutions of the motor region, which he supposed accounted for this peculiar, variable form of hemiplegia.

Adjourned.

## MONTREAL MEDICO-CHIRURGICAL SOCIETY.

*Stated Meeting, October 22, 1886.*

THE PRESIDENT, JAMES C. CAMERON, M.D., IN THE CHAIR.

### SUBMUCOUS INJECTION OF LACTIC ACID FOR THE CURE OF THE EARLY STAGE OF LARYNGEAL PHTHISIS.

DR. GEORGE W. MAJOR, in a short paper, related his experience of lactic acid as a local application in the ulcerative stage of laryngeal phthisis. He said that it was probably the most speedy and most efficacious plan of treatment yet introduced. Ulcerations healed under it most kindly, and tuberculous deposits underwent absorption more rapidly than by any other means. But it was of lactic acid employed as a submucous injection into the substance of the laryngeal tissues that he wished to speak. In the early swellings and œdemata it had rendered very remarkable results in Dr. Krause's (Berlin) hands. Dr. Major had the privilege, during the past summer, of seeing many of Dr. Krause's cases and he was happy to be able to endorse all that had been maintained by Dr. Theodore Herring, of Warsaw, and Dr. Krause in its favor when used as an injection. Dr. Major employed a twenty to thirty per cent. solution of the remedy, and inserted at one sitting from fifteen to twenty minims of the liquid. Very trifling pain followed, and but little after-irritation was induced. The swellings disappeared in periods varying from twenty to thirty days and ulcerative changes were avoided. A case undergoing treatment by injection was exhibited to the members of the Society. and the result was deemed very satisfactory and encouraging. Dr. Herring's syringe, as modified by Krause, was the instrument employed for the injections. Altogether, Dr. Major regarded the lactic acid treatment of laryngeal tuberculosis as the greatest advance yet made in the treatment of this disease and looked forward to a great future for it.

DR. R. J. B. HOWARD said that he had listened with interest to Dr. Major's paper and was delighted to know that such a distressing disease as laryngeal phthisis could be so successfully treated by such simple means. He had seen several cases of this affection lately, and improvement had followed treatment by application of solutions of nitrate of silver and other means. He would like to ask Dr. Major whether the frequent puncturing of the laryngeal structures would not cause inflammation of those parts.

DR. F. W. CAMPBELL said that it was important, whilst treating such a disease as tuberculosis locally, not to omit general constitutional remedies, such as cod-liver oil, hypophosphites, etc.

DR. GEORGE ROSS was glad to hear of a successful method of treating that most painful affection, laryngeal phthisis. He, however, thought that the cases in which tubercle is first deposited in the throat are extremely rare, and although apparently in many cases the disease first appears there, yet it turns out afterward that the lungs themselves were involved also. In cases of tuberculous disease of joints and glands, the removal of the disease from these centres is most beneficial, and so, also, would this benefit be great if the disease localized in the larynx could be removed. In the treatment and cure of tuberculous laryngitis in the early stage by any remedy, there is always an element of doubt as to the diagnosis, and many cases might be recorded as cures which were never affected with tuberculous disease at all. However, he considers that great benefit is conferred by improving the condition of the larynx, even though the ultimate result of the cases is unfavorable.

DR. CAMERON asked whether there was any tendency to relapse in the cases cured by lactic acid.

DR. MAJOR, in reply, stated that no inflammatory action followed the punctures; also that no relapses, as a rule, occur in cases of laryngeal phthisis. He did not think that tuberculous disease often occurs primarily in the larynx. The advantage of this method of treatment is that the case can be treated before ulceration takes place.

### TUMOR OF THE OPTIC NERVE.

DR. BULLER exhibited a tumor of the optic nerve removed from the orbit of an otherwise healthy female child aged seven years. He also showed a photograph representing the appearance of the child before operation. There was considerable prolapse in a forward and slightly downward direction. The protrusion of the eyeball had commenced to be noticeable about six months previously, and had gradually increased without pain or signs of inflammatory action. The movements of the eyeball were only slightly impaired, but the eye was totally blind. The blindness had been discovered by a physician who had examined the eye some two months previously. There was a high degree of papillitis (choked disk), but no other ophthalmoscopic changes. These facts seemed to warrant a diagnosis of tumor of the optic nerve, and an attempt was made to remove the growth without removal of the eyeball, but during the progress of the operation it was found that the enlargement of the nerve extended quite to the optic foramen, and in order to guard, as far as possible, against a recurrence of the growth, Dr. Buller thought it expedient to remove the eyeball and apply chloride of zinc to the apex of the orbit. The patient made a good recovery from the operation, and returned to her home ten days after. A few days ago (six months after the operation) she was reported to be in excellent health, with as yet no signs of recurrence of the growth. The microscopic examination of the tumor showed it to be a round-celled sarcoma—possibly a glioma.

### ANEURISM OF THE AORTA.

DR. M. C. MCGANNON, of Brookville, Ont., exhibited a specimen of aneurism of the aorta removed from a patient aged forty-eight, who had died from pneumonia, induced by pressure of the aneurismal tumor on left bronchus. At first, patient never suffered from severe pain, the only symptom pertaining to aneurism being an irritating cough; there was no dulness or percussion or bruit.

Some time before death, however, the patient had intense pain in the back, and pulsation became visible on the right side of the sternum. After death, the left lung was found to be consolidated, right lung normal.

DR. GARDNER exhibited the following specimens obtained during the previous ten days.

### 1. SUBMUCOUS MYOMA.

Removed by enucleation; the patient, a lady of forty-

five years, the mother of several children, the last born five years ago, had suffered from internal hemorrhage ever since. After dilatation by Tait's dilators, the capsule of the tumor was slit with a bistoury, the tumor grasped with vulsellum forceps, separated by the finger, and dragged from its bed. The shreds of the capsule were next clipped off, the uterine cavity well douched with hot water, and Churchill's solution of iodine freely applied. No drainage or irrigation was practised. The patient made an easy and rapid recovery.

2. CYST OF THE LEFT LABIUM.

Tumor had been five years growing, and was the size of a hen's egg; it was easily enucleated.

3. EXTIRPATION OF THE UTERUS BY THE VAGINAL METHOD.

The vagina was incised all around the cervix, the bases of both broad ligaments ligatured in sections, the Douglas pouch opened, and the bladder separated; the remaining portions of the broad ligaments were then clamped with Ferrier's forceps devised for the purpose, after which the uterus was completely extirpated. A few bleeding points required ligature. The operation was completed by placing a T-drainage tube on the Douglas fossa. The clamps were removed at the end of three days, and the drainage tube a day later. The patient recovered without a bad symptom.

4. TWO CASES OF MULTILOCULAR OVARIAN CYSTOMA.

In the first case the patient was aged sixty-eight; the operation was a simple one, and there were never any adverse symptoms referable to the operation, but forty-eight hours after she developed pleurisy of the right side, which extended to the left two days later. The pulse reached as high as 175. After four or five days the serious symptoms abated, and rapid convalescence took place.

In the second case, that of a young lady aged twenty-two, there were no adhesions, but some troublesome bleeding took place from a rent in the broad ligament; slight oozing continued after application of a continuous silk suture and a drainage tube was used for forty hours. The left ovary was as large as a hen's egg and was cystic. It was also removed. Patient did well. Dr. Gardner remarked, with reference to Schröder's practice of saving a portion of the ovary in such cases when the condition seemed to justify it, that while on a visit to Berlin, during the past summer, he was told, on inquiry, that the professor had discontinued the practice.

DR. TRENHOLME said that during the past summer he had twice extirpated the uterus. In these cases he first opened Douglas's fossa and then ligated and separated the uterus from the bladder with the finger, although at the time of operation the disease was confined to the cervix; in both cases it has recurred after four months. He is not now in favor of removing the uterus for cancerous ovaries, and thinks that on account of the large amount of lymphatics in the neighborhood, recurrence is almost always certain to take place.

DR. KENNEDY agreed with Dr. Trenholme in thinking that the number of lymphatics in the broad ligament gave slight hopes of radical cure of the disease after extirpation. He thought that the use of Terrier's forceps would greatly simplify the operation.

## NEW YORK ACADEMY OF MEDICINE.

*Stated Meeting November 4, 1886.*

THE PRESIDENT, A. JACOBI, M.D., IN THE CHAIR.

THE ERNST KRACKOWIZER PRIZE.

THE PRESIDENT, as Chairman of the Committee appointed by the Council in reference to the Ernst Krackowizer Prize Fund, the accumulated interest of which is to be devoted every third year to an award for an essay, the standard and merit of which are to be determined by a committee composed of the Presidents of the New York Academy of Medicine, of the Bellevue Hospital Medical College, of the Medical Department of the University of the City of New York, and of the College of Physicians and Surgeons (unless the Academy should direct otherwise), announced that the first subject selected by the committee was "New Observations on Osteomyelitis," and that all competing essays should be sent in on or before the first day of January, 1889.

DR. WM. GILMAN THOMPSON read a paper on

THE MOVEMENTS OF THE HEART AND INTESTINES ILLUSTRATED BY PHOTOGRAPHY.

He said that several years ago he had been much interested in reading the account of a series of photographs of the horse, taken while the animal was in motion, and that this had suggested to him the practicability of securing similar views of the movements of the heart under various conditions. Carrying this suggestion out, he had been enabled to take photographs of normal hearts in full systole and full diastole, and also as affected by various stimuli, such as heat, and different drugs.

In his early experiments he employed an ordinary camera; but more recently he had devised a form of apparatus which rendered the work much easier as well as more accurate. The difficulty about the ordinary camera was that only one view could be taken at a time, and then the plate had to be changed. By the aid of his improved apparatus, however, he was able to take no less than six successive views on the same plate, in the space of one second, a feat in photography which had never before been achieved. The problem was to revolve the plate, which was circular, and stop it six times in the second, each time exposing one-sixth of the surface, and this he had succeeded in accomplishing by means of an arrangement of cog-wheels turned by a handle. Each image was clear and distinct, without any blurring. The animal of which the heart was to be photographed was anæsthetized, and an incision having been made in the median line, the heart was exposed, and a collar of celluloid slipped behind it in order to secure a light background, which was a matter of no little importance. The light used was strong sunlight, and the animals experimented on were cats, kittens, rabbits, rats, frogs, and pigeons.

The results were very interesting, and the movements, changes of form, and pulsations of the heart were distinctly shown. The shape of the apex was found to be greatly affected by different drugs, and of the various stimuli employed, heat was found to produce the strongest systole. Of the chemicals tried, glonoin, either painted over the surface or used hypodermatically, was also very active in producing a similar effect; while chloral caused marked diastolic distention.

In photographing the movements of the intestines the same methods were employed. He had been able to demonstrate positively that two peristaltic waves sometimes occurred, moving simultaneously in opposite directions; although the preponderance of motion was toward the anus.

In summing up his observations, Dr. Thompson alluded to the accuracy of the photographic method he had devised, the rapidity and ease with which data for scientific conclusions could be accumulated, and the facility with which the action of various cardiac and intestinal stimuli could be illustrated before classes of students.

In regard to the movements and form of the heart he said: (1) The long diameter may or may not shorten in systole; but it usually shortens from one-fifth to one-thirteenth.

(2) The transverse diameter usually shortens at least one-fourth.

(3) The apex does not in all cases cause the impulse-beat; and this very frequently is produced by the hardened anterior wall of the heart pressing against the thoracic walls. The form of the apex varies greatly under the influence of different drugs.

(4) The contractile power of the right ventricle may outlast that of the left, and pathologically the two ventricles may contract independently.

(5) The lumena of the ventricular cavities are capable of being entirely occluded by the circular fibres acting independently of the longitudinal and transverse; thereby demonstrating the immense reserve contractile power in all the cardiac fibres.

DR. W. GILL WYLIE read a paper on

TWO OPERATIONS FOR INTESTINAL OBSTRUCTIONS.

He said that out of the sixty-seven laparotomies which he had performed since June, 1885, six were not gynecological. In only two of these, however, was the diagnosis made before the operation. In order to make the list complete, he gave a *résumé* of all the six cases.

*Complete intestinal obstruction.* The first was that of a female patient, fifty years of age, who had had three children and one miscarriage. Her last pregnancy was twenty years ago, and the menopause occurred four years ago. She had a uterine fibroid, and after the passage of the sound on one occasion an attack of peritonitis was set up. Afterward she had great trouble in getting her bowels moved. Previous to the 7th of October last she suffered from colicky pains and distention of the abdomen. On that day she had much more severe pain, and suffered greatly from vomiting. In order to relieve the pain, large quantities of morphia were required. Ox-gall enemata and other means entirely failed in causing an evacuation of the bowels. Dr. Wylie saw the patient in consultation with Drs. F. N. Otis and Ward, and it was agreed that if a movement could not be secured laparotomy should be resorted to. The pulse and temperature were nearly normal, and the matter vomited was not stercoraceous. The patient was found to be very listless, but this could not be attributed to the opiates which she had been taking, since the pupils were not contracted.

On the 10th of October he operated. A short incision was made in the median line, and a number of small peritoneal cysts were discovered. A large uterine fibroid was found, and on one side of it was a mass of intestines closely matted together. The incision was then extended, and a large part of the intestines turned out of the abdominal cavity, when the cause of the obstruction at once became apparent. A loop of the ileum was found to be firmly bound down by a strong band of adhesions; and the obstruction thus caused was so complete that the intestines in the vicinity had turned black, and the lumen of the canal was destroyed. This firm band was cut, and the lumen was at once restored. The fibroid involved not only the uterus, but both broad ligaments; but as the patient had passed the menopause, it had already begun to atrophy, and it was not disturbed. The wound was closed in the usual way, and ten hours after the operation she had a copious liquid stool. The temperature never rose above 101°, and the patient did perfectly well. Now, at the end of three weeks, her bowels move more freely than they have for ten years past.

A point of interest in connection with this case was the normal temperature and pulse, notwithstanding the presence of such a grave local condition, and Dr. Wylie said that he was convinced that many cases of laparotomy are followed by intestinal obstruction, which is generally mistaken for peritonitis. Until very lately it had been the universal practice to keep the bowels confined for five or six days after laparotomy, notwithstanding the presence of tympanites and vomiting. He would not go so far as the laparotomist who said that a brisk purge was the best treatment for peritonitis; but he felt sure that a turpentine or ox-gall enema was often of great service after abdominal section. He had adopted the plan of always opening the bowels after the first twenty-four hours, if there were any indications for it; and in all cases he did this at the end of three days, at all events.

*Partial intestinal obstruction.* The second case was that of a widow, twenty-five years of age, who was admitted to Bellevue Hospital in June, 1885. She was sent in as a "tumor case." There was a swelling in the left side of the abdomen, and the bowels were obstinately constipated. The uterus was firmly bound down by adhesions; but no very accurate diagnosis could be made on account of the distention of the abdomen. On the 28th of June an abdominal incision was made, when it was found that there were extensive peritoneal adhesions, with partial intestinal obstruction. The glands were found to be greatly enlarged, and this was attributed either to syphilis or to malignant disease. In the other cases which he had had, the obstruction was due simply to pressure from a tumor or adhesion due to the same cause.

*Laparotomy for peritonitis.* The third case was one of laparotomy for peritonitis. The patient was a negro, who was admitted to the Bellevue Hospital August 24, 1885. Two weeks before, he had had an attack of severe pain, and noticed that his abdomen was enlarged. He afterward had a number of chills, followed by high fever. After his admission the temperature was 103°, and the abdominal wall in the vicinity of the crest of the ilium, was found to be indurated over a space of several inches. He made the diagnosis of suppurative peritonitis, and prepared to perform laparotomy; but Drs. Janeway and L. H. Stimson, who saw the case in consultation, did not think the operation called for. After-

ward, however, the late Dr. T. H. McBride saw the patient, and agreed with Dr. Wylie, that laparotomy should be performed. Accordingly he did the operation. A cavity was found which contained ten ounces of pus, and the intestines were matted together. The cavity was kept well washed out for several days, and the patient made a good recovery.

*Exploratory laparotomy.* The other three cases were admitted to the hospital as "tumor cases." In the first he made an exploratory incision, and found tubercular peritonitis present. The patient was a married woman, thirty years of age, who had had five children and one miscarriage. There was a small tumor in the left inguinal region, and he operated April 12, 1886. Two quarts of yellowish and comparatively clear fluid were evacuated, and he then found a semi-solid mass. There were also many grayish-white nodules; the tubercular deposit involving both the intestines and mesentery. Drainage was kept up as long as any fluid came away, and the operation was followed by very marked relief in the patient's sufferings. A sinus was finally established in the site of the wound, and ulceration followed. She died about the middle of July.

The fourth case was also one of tubercular peritonitis. The patient was a female, fifty-four years of age, who had had five children; and an exploratory incision was made in the same way.

The sixth, last case, was that of a patient twenty-five years of age, admitted to Bellevue Hospital October 22d. The abdomen was distended with fluid, and there was some jaundice. On October 23d an incision was made in the median line, and a trocar inserted into the peritoneal cavity; when three gallons of fluid were withdrawn. The nodulated condition of the liver then found showed that there was cancer of that organ.

In Germany, Dr. Wylie said that permanent drainage had recently been resorted to in cases of tubercular peritonitis, and in the two cases related in which he had tried it, the relief afforded the patients had been very great. He stated that in a large number of cases of abdominal dropsy exploratory laparotomy was far less dangerous than tapping, and he contended that laparotomists in this country will never succeed in obtaining as good results as European operators so long as the mischievous practice of tapping continues in vogue. Patients with ovarian tumors, on account of the temporary relief afforded them by tapping, are very apt to delay applying to competent operators for their removal until a stage of exhaustion is reached which leaves but a meagre chance of recovery.

## NEWS ITEMS.

INTER-STATE NOTIFICATION IN INFECTIOUS AND CONTAGIOUS DISEASES.—The following resolutions, presented by the National Conference of State Boards of Health, were adopted by the American Public Health Association at Toronto, October 8, 1886:

*Whereas*, It is necessary for the protection and preservation of the public health that prompt information should be given of the existence of cholera, yellow fever, and smallpox; be it

*Resolved*, That it is the sense of the National Conference of State Boards of Health that it is the duty of each State, provincial, and local board of health, in any locality in which said diseases may at any time occur, to furnish immediately information of the existence of such disease to boards of health of neighboring and provincial States, and to the local boards in such States as have no State board.

*Resolved*, That upon rumor or report of the existence of pestilential disease, and positive definite information thereon not being obtainable from the proper health authorities, this Conference recommends that the health officials of one State shall be privileged and justified to go into another State, for the purpose of investigating and establishing the truth or falsity of such reports.

*Resolved*, That, whenever practicable, the investigations made under the preceding section shall be done with the coöperation of the State or local health authorities.

*Resolved*, That any case which presents symptoms seriously suspicious of one of the aforenamed diseases, shall be treated as suspicious, and reported as provided for in cases announced as actual.

*Resolved*, That any case respecting which reputable and experienced physicians disagree as to whether the disease is or is not pestilential, shall be reported as suspicious.

*Resolved*, That any case respecting which efforts are made to conceal its existence, full history, and true nature, shall be deemed suspicious and so acted upon.

*Resolved*, That in accordance with the provisions of the foregoing resolutions, the Boards of Health of the United States and Canada represented at this conference, do pledge themselves to an interchange of information as herein provided.

SALICYLATED BEER.—The custom of employing salicylic acid to prevent deterioration of beer is the subject of active discussion in French journals. The quantity of the acid employed is by no means inappreciable. It is computed that the salicylated beer of Paris contains more than 20 centigrammes per litre, so that a considerable quantity is taken by a thirsty beer consumer. A contemporary commenting upon this fact, says: There are grounds for believing that the rate of elimination of the antiseptic drug is by no means rapid, and any congestion of the kidney or liver would certainly retard its excretion in great degree. Again, we are not sure, even supposing that the substance were excreted completely, that constantly having the tissues bathed by a weak solution of salicylic acid would be unattended with danger. Salicylic acid is a member of a dangerous group of chemical bodies, the best known of which, carbolic acid, is a most rapid and fatal poison.

THE LENGTH OF A STEP.—Dr. Gilles de la Tourette has recently published a monograph upon normal locomotion and the variations in the gait caused by diseases of the nervous system. He found, from a comparison of a large number of cases, that the average length of a pace is, for men, 25 inches, for women 20 inches. The step with the right foot is somewhat longer than that with the left. The feet are separated laterally in walking about 4½ inches in men, and about 5 inches in women. The ataxic gait is characterized by an actual shortening of the pace coinciding with an apparent lengthening, and by a considerable increase in the lateral separation of the feet.

CRITERION OF INTOXICATION.—Dr. T. E. Wright has carefully investigated the question: "When is a man drunk?" and decides as follows: "When consciousness becomes modified, in any degree whatever, through the influence of alcohol, and when, or as long as no exercise of independent nervous force is adequate to restore it to a normal state, the man so affected is drunk."

CARDIAC LYMPHATIC GLAND.—Dr. E. Baisrtrocchi has demonstrated the existence of a lymphatic gland of the heart. The gland is situated where the fold at the beginning of the aorta touches the pulmonary artery. He finds the gland to be constant in many of the lower animals and has observed it five times in the human subject.

HOMŒOPATHY IN THE UNITED STATES.—It is stated that, in the United States, there are more than 10,000 homœopathic practitioners, and that there are fourteen colleges for educating students in homœopathy. The homœopaths set forth their views in 143 societies and twenty journals, and give their valuable services to the public at fifty-one hospitals and forty-eight dispensaries. Our usually well-informed contemporary, the *New York Medical Record*, appears to accept these figures as at least approximately correct, though at the same time it expresses the belief that Americans are outgrowing their curious love for this worn-out theory.—*British Medical Journal*, Oct. 23, 1886.

A NEW HYBRID.—Before the St. Louis Medical Society Dr. Funkhouser exhibited a specimen of an embryo five days old, the result of the union of a rooster and a duck. This was the only fertile specimen of sixteen such eggs hatched in an incubator. The doctor thought his experiment tended to upset prevailing ideas about species, general orders, and classes. All sources of error with regard to the roosters and ducks had been carefully avoided. He regarded it as an extraordinary event that a member of the order of swimmers, being crossed with the order of scratchers, should have produced a living result, thus jumping over not only species, but also further. The duck and the rooster are of the same class, but belong to different orders.

DIPHTHERIA AND PIGEON-KEEPING.—At a recent meeting of the Anatomical and Pathological Society of Brussels, M. Destrée called the attention of the members to the fact that cases of croup had been greatly and steadily on the increase in Brussels, so that croup and diphtheria were now endemic there; and he ventured to suggest that there might be some connection between the keeping of pigeons and the occurrence of these diseases. He pointed out that Emmeriels, of Munich, had found the microbe of diphtheria in these birds, and he himself had met with three cases of croup in families where pigeons were kept, in all of which cases signs of the disease had appeared in the pigeons. M. Destrée hoped that members would bear this matter in mind, in order that it might be further elucidated.

VENEREAL INFECTION PRONOUNCED A CRIME.—Some consternation may be caused among a certain class by a recent judgment of Justice Wills, of the Central Criminal Court, England. The charge against the prisoner was on two counts, one with having had carnal knowledge of an imbecile woman, aged eighteen, and another, under 24 and 25 Vict., c. 100, s. 47, for a "fraudulent assault" upon the same woman, occasioning her actual bodily harm. The harm done was the wilful infection with syphilis. The prisoner was found guilty on both heads, and sentenced to two years' imprisonment for the first, and five years for the second. The more remarkable piece of information is that a man who has immoral sexual connection with a woman, knowing himself to be suffering at the time from gonorrhœa or syphilis, is liable to prosecution and penal servitude.

FEMALE DRUG CLERKS IN HOLLAND.—In Holland ladies are gradually usurping the occupations of the pharmaceutical assistants. Out of a total of 55 candidates, 19 out of 31 females, and only 8 out of 24 male candidates were successful, in the recent State examination.

THE DISINFECTION OF BOOKS.—The health authorities of Aberdeen have ordered that all books taken from the public library, which are known to have been in the hands of those suffering from any contagious disease, must be sent to a disinfecting establishment before being returned to the shelves. The librarian is provided with a list of the families in the town where there any cases of contagious disease.

ABSENCE OF ILL RESULTS FROM CONSANGUINEOUS MARRIAGES IN JAPAN.—An interesting contribution to the study of consanguineous marriages occurs in the paper of Dr. Baelz on the Japanese, in the *Sei-I-Kwai*. He says: "Near the bathing resort, Atami, there is situated a small island named Hatsushima. The inhabitants of that island, nearly three hundred in number, have for more than two hundred years exclusively married amongst themselves; strange blood has never entered the island. Those people live by fishing, and from the proceeds of a small trade with the neighboring coast. They are physically and mentally quite normally developed, and their statistics show a larger number of births, and a smaller number of deaths in proportion than any other part of the Japanese empire."

THE ACTION OF WATER ON LEAD.—Prof. Crookes and Drs. Odling and C. Meymott Tidy contributed a valuable paper on "The Action of Water on Lead" to the proceedings of the recent meeting of the British Association. They find that the action of a soft water on lead pipes does not depend upon its degree of softness, but to the amount of silica it contains. When the silica was as low as 0.3 grain per gallon, the water dissolved the lead; but where it was more than 0.5 grain, the water had no solvent action on the lead pipes. It is therefore recommended that the water should be filtered at the works, and that where necessary the filter-beds be so modified as to insure the silication of the water. They are inclined to the belief that when the amount of lead in the water does not exceed 0.05 grain per gallon, it will not produce any hurtful effect.

A NEW DIAGNOSTIC SIGN OF IMBECILITY.—Dr. Giné, of Barcelona, has published in the *Independencia Medica* an article on what he terms "phrenopathic uranostomatoscopy," and in which he maintains that

all congenital mental deficiencies are accompanied by a depression of greater or less profundity in the centre of the palatine vault; and further, that this depression is in direct and constant proportion to the degree of mental deficiency. It is, for instance, comparatively small in simple dulness or retardation of the faculties, deeper and more marked in imbeciles, and deepest and largest in idiots. He therefore suggests the exploration of the palatine arch as a method of diagnosis in such cases.

FLUORINE.—The element fluorine, which has heretofore defied all efforts to isolate it from its compounds, has at last been produced by a French chemist, M. Moissan. It was obtained by decomposing, by an electric current from twenty Bunsen cells, a quantity of anhydrous hydrofluoric acid contained in a platinum U-tube, at a temperature of —23° C. Hydrogen gas was given off at the negative pole, and was readily recognized; while the other arm of the tube became filled with gas which was undoubtedly pure fluorine, as the results of an analysis show that it contains no hydrogen. As might have been anticipated, fluorine is extremely active, violently attacking organic substances, and uniting with various elements to form fluorides. Water is decomposed by it into ozone and hydrofluoric acid. M. Moissan was at work upon the problem for nearly a year before his efforts were rewarded by this brilliant discovery.

OBITUARY.—DR. W. D. STEWART, late Acting Assistant Surgeon U. S. Marine-Hospital Service, died on October 31, 1886, at Vineyard Haven, Mass., of chronic intestinal catarrh, which he had contracted during his service in the late war, and from which he never entirely recovered.

Dr. Stewart was born in Trimble County, Kentucky, in 1820. He was a graduate of the University of Louisville, of the class of 1846, at the time when the late Professor S. D. Gross occupied the Chair of Surgery, and was under the preceptorship of that distinguished teacher. He was also a graduate of the University of the City of New York. After the completion of his medical course, he commenced the successful practice of his profession at Fort Wayne, Indiana, where he remained until the beginning of the War of the Rebellion. Proceeding to Washington, he obtained the position of Brigade Surgeon of Volunteers, August 3, 1861, with the rank of Major, and was assigned to duty on the Military Governor's Staff at Washington, D. C. At the close of the war he was mustered out of service, and for honorable, meritorious services was brevetted Lieutenant-Colonel.

In the year 1869, he was appointed Inspector of U. S. Marine Hospitals, and was later associated, in this capacity, with Surgeon John S. Billings, U. S. Army, by whom he was afterward succeeded. He was then selected as Medical Sanitary Inspector of the Board of Health of the District of Columbia, which position he retained for six years. After the severance of his connection from the Board of Health, he accepted the appointment of Assistant Surgeon, Marine Hospital Service, and was ordered to duty at Vineyard Haven, Mass.

He was a man of fine physique, affable in manner, and entertaining in conversation, and his death will be lamented by a large circle of friends to whom he had endeared himself by his honor, integrity, and cheerful deportment. His body will be temporarily interred at Vineyard Haven.

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### OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 6, 1886.

NEILSON, J. L., *Surgeon U. S. N.*—Ordered to receiving ship "New Hampshire."

DRENNAN, M. C., *Surgeon U. S. N.*—Detached from receiving ship "New Hampshire" and granted one year's leave.

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### OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 2 TO NOVEMBER 8, 1886.

CLEMENTS, B. A., *Major and Surgeon.*—Died November 1, 1886, at Fort Leavenworth, Kansas.

WRIGHT, J. P., *Major and Surgeon.*—From the Department of Texas to the Department of Missouri for duty as attending surgeon at Leavenworth Military Prison, Fort Leavenworth, Kansas. —*S. O. 257, A. G. O.*, November 4, 1886.

FORWARD, W. H., *Major and Surgeon.*—From duty as attending surgeon at Headquarters of the Division of the Missour and examiner of recruits at Chicago, Ill., to the Department o Dakota.—*S. O. 257, A. G. O.*, November 4, 1886.

HUBBARD, V. B., *Major and Surgeon.*—From the Department of Arizona to duty as attending surgeon at the Headquarters o the Division of the Missouri and as examiner of recruits at Chicago, Ill.—*S. O. 257, A. G. O.*, November 4, 1886.

PERLEY, HARRY O., *Captain and Assistant Surgeon.*—Granted leave of absence for four months on surgeon's certificate of disability.—*S. O. 257, A. G. O.*, November 4, 1886.

IVES, FRANCIS J., *First Lieutenant and Assistant Surgeon.*—Ordered to proceed to and take station at Fort D. A. Russell, Wyoming Territory.—*S. O. 145, Department of Platte*, November 4, 1886.

PROMOTION.

O'REILLY, ROBERT M., *Captain and Assistant Surgeon.*—To be Major and Surgeon, November 1, 1886, vice Clements, deceased.

APPOINTMENTS.

CLENDENIN, PAUL, First Lieutenant and Assistant Surgeon, November 5, 1886.

ANDERSON, CHARLES L. G., First Lieutenant and Assistant Surgeon, November 5, 1886.

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### OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING NOVEMBER 6, 1886.

AMES, R. P. M., *Passed Assistant Surgeon.*—Relieved from duty at Marine Hospital, New York, N. Y., to assume charge of Marine Hospital, Vineyard Haven, Mass., November 1, 1886.

URQUHART, F. M., *Passed Assistant Surgeon.*—To proceed to Norfolk, Va., for duty, November 4, 1886.

YEMANS, H. W., *Passed Assistant Surgeon.*—Relieved from duty at Marine Hospital, San Francisco, Cal., to assume charge of the Service at Galveston, Texas, November 1, 1886.

WASDIN, EUGENE, *Passed Assistant Surgeon.*—When relieved, to proceed to New York, N. Y., for duty at Marine Hospital, November 1, 1886.

WILLIAMS, L. L., *Assistant Surgeon.*—Relieved from duty at Marine Hospital, Wilmington, N. C., to proceed to Pittsburg, Pa., for temporary duty, November 5, 1886.

PERRY, T. B., *Assistant Surgeon.*—Relieved from duty at Marine Hospital, St. Louis, Mo., to proceed to San Francisco, Cal., for duty at Marine Hospital, November 1, 1886.

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